

Patran[®] 2010

Installation and Operations Guide

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1

Introduction & Overview

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1.1 Introduction

Most of the installation and configuration tasks are managed by an automated installation utility, `mscsetup` (`patran_20xx_windows.exe` on Microsoft Windows systems). This manual is designed to guide you through the process of using the automated installation utility.

Who Should Use This Guide

This manual is intended to guide system administrators and users through the installation . The instructions assume that you have a basic knowledge of the operating system you are using. Root or Administrator level access is required for installation of the licensing system, and will probably be necessary to access centralized installation directories.

What This Guide Contains

This guide contains all the information you need to install and configure the product. It is organized into the following chapters:

- [Installing on Microsoft Windows, 5](#)
- [Installing on UNIX and LINUX, 27](#)
- [User Environment, 49](#)
- [Required Hardware & Software Configurations, 79](#)
- [Problems & Resolutions, 101](#)
- [Installing the MSC.License Server, 121](#)
- [Testing the Installation, 133](#)

1.2 Overview

The software system consists of several components: the core pre- and postprocessor, the PDB database system, modules and preferences, the FLEXlm licensing system, and the on-line help system. The product name refers both to the pre- and postprocessing components, and to the system as a whole.

Pre- and Postprocessor

Patran is an open-architecture, expandable, 3D Mechanical Computer Aided Engineering (MCAE) environment with an interactive graphic interface. All pre- and postprocessing, translation, and solver capabilities are accessed from within this graphical environment.

Analysis Modules, CAD Access Interfaces, and Preferences

Patran is designed as an open, expandable system. Additional interfaces and components can be added to the core system. Analysis modules provide specialized solvers for use from within Patran. CAD Access interfaces allow direct access of CAD geometry. Analysis Preferences allow integration with MSC analysis solvers as well as third-party analysis codes.

The installation handles all additional components, but each may be licensed separately.

FLEXlm

A FLEXlm 11.6 license server is required for all platforms. If your installation points to an older license server, you will have to install the new FLEXlm license server.

FLEXlm functions as a stand-alone nodelock license server or as a distributed license system. This guide provides basic FLEXlm installation instructions in the section [Installing the MSC.License Server, 121](#). For other issues and questions, please consult the Acreesso documentation at their web site, www.acresso.com.

Online Documentation

The Patran HTML Help system is a hybrid JAVA/JAVA Script Help system that can be displayed on most computer platforms and browsers. For the best experience we strongly recommend the following:

- On Windows, use Microsoft Internet Explorer 4.0 or later. (You can use Netscape Navigator 4.0; however, you may experience problems with some higher level help features, such as TOC sync)
- On UNIX, use Netscape Navigator 4.0 or later.

If you use a 3.0 browser, all of the content is accessible, but some features (such as Search) will not work.

The Patran Help Pages make extensive use of JavaScript. Make sure that JavaScript is enabled in your browser. If you plan to use the search feature, make sure that Java is enabled, as well.

2

Installing on Microsoft Windows

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2.1 Creating a New Installation

1. It is recommended to exit all Windows programs before proceeding. It is also recommended that you install any solver applications that Patran or any of its verticals (i.e., MSC FEA) will use (such as MSC or MD Nastran, Marc, or MSC Sinda) before installing Patran.
2. Log in to your system. In general, you do not need administrator privileges except as follows:
 - To update one or more DLL files in the Windows system directory. The setup utility will recognize this and ask you to install with administrator privilege if necessary.
 - To create the installation directory. You may need administrator privilege to grant this permission.
 - To install the FLEXlm License Server.
 - To create installations visible by other users.
 - To utilize file association option.
 - To install, configure and/or start the Analysis Manager.
3. If you are downloading from the Solutions Download Center, download the self-extracting archive (.exe) and follow these steps:
 - Copy the self-extracting archive (patran_20xx_windows.exe) file to a temporary subdirectory with enough disk space. Make a note of this location.
 - Click on patran_20xx_windows.exe to start install shield (product installer). For the remainder of the installation process, follow instructions in the product installation guide. You may remove temporary files from the subdirectory created in this step after the installation is complete.
4. If you are installing from a DVD-ROM, insert the DVD. If the installer does not start automatically, select **Run** from the **Start** menu and type `x:\patran_20xx_windows.exe`. Replace the “x” with your DVD-ROM drive letter.
5. The installer will present you with the options to select. You may install them in any order.
 - Patran (Installs the Patran software system and any of its vertical products).
 - Analysis Manager. See [Analysis Manager Setup, 19](#).
 - Documentation. See [Documentation, 23](#).
 - MSC.Licensing¹ (Installs a FLEXlm license server). See [Licensing Installation \(Optional\), 10](#)
6. Follow the on-line installation instructions from this point on for each option selected.²

¹TCP/IP Required: For licensing to work you must have the TCP/IP networking facility installed. Patran also requires an ethernet card even if the workstation is not connected to a network. Patran uses the ethernet card to create a system ID for FLEXlm licensing. For additional information see [FLEXlm and Licensing Problems, 110](#).

Select Product to Install:

Patran is the default product to install. However, you may install one or all of the following Patran vertical products. You may rerun the installer to add, modify or delete any of these products. Only a single installation is required for all these products.

Product	Description
Patran 20xx	The latest version of standard Patran.
Patran 20xx (MD Nastran Enabled)	The latest version of standard Patran enabled to access MD Nastran functionality.
MSC FEA 20xx	A Patran and MSC Nastran package combination where Patran and MSC Nastran operate in an interlocked manner. It is necessary to install MSC Nastran separately or have an existing MSC Nastran installation.
MSC AFEA 20xx	A Patran and Marc package combination where Patran and Marc operate in an interlocked manner. It is necessary to install Marc separately or have an existing Marc installation.
MSC TFEA 20xx	A Patran and MSC Sinda package combination where Patran and MSC Sinda operate in an interlocked manner. It is necessary to install MSC Sinda separately or have an existing MSC Sinda installation.

A separate desktop icon is created for each product above and a separate entry in the Start menu under MSC.Software | Patran 20xx.

For all products above it may be necessary to configure the setup to access the necessary solver codes. This is explained in [Analysis Preferences Setup](#), 14.

²Installation Log File: The installation produces a log file, which can be useful for investigating installation problems. The file is created in the directory specified by the %TEMP% environment variable. The file name is constructed as follows: Patran_20xx_date_time.log If this file can not be created, the installation program will issue a warning and continue the installation without logging progress in this file.

Select Setup Type:

In some instances the following installation options may be presented:

- **Full** installs all modules, options and preferences.
- **User Selectable** allows you to select which modules, options and preferences are installed. If you select custom, you will be presented with a form to select individual components.
- **Common Features** installs a reduced set of the most frequently used modules, options and preferences.
- **Client** configures a workstation to run from a central file server.

The table below lists some of the selectable items that require information from the user during installation or subsequent steps to enable full functionality access . Not all of these may be presented to you as selectable options.

Product Set

Analysis Preferences

Analysis Manager

Documentation

Flightloads:

Licensing

Patran Materials Enterprise:

Patran Pro/ENGINEER Access

Patran Thermal

SuperModel

Patran UG NX Access

Additional Information

See [Analysis Preferences Setup, 14.](#)

See [Analysis Manager Setup, 19.](#)

See [Documentation, 23.](#)

See [Flightloads and Dynamics Setup, 19.](#)

See [Licensing Installation \(Optional\), 10.](#)

See [Patran Enterprise Materials, 22.](#)

See [Pro/ENGINEER Access Setup, 14.](#)

See [Patran Thermal Setup, 17.](#)

See [SuperModel, 21.](#)

See [Unigraphics Access Setup, 16.](#)

Invoking Patran (and its verticals)

Patran and its verticals (i.e., MSC FEA) can be invoked in three different manners:

1. Double-click on the desktop icon created.
2. Select it from the Start menu:
Start > (All) Programs > MSC.Software > Patran 20xx > Product
3. From a DOS Command Prompt by typing:
C:\\$P3_HOME\bin\patran
C:\\$P3_HOME\bin\mdpatran
C:\\$P3_HOME\bin\mscfea
C:\\$P3_HOME\bin\mscfea
C:\\$P3_HOME\bin\msctfea
where \$P3_HOME is the Patran installation directory, typically
C:\MSC.Software\Patran\20xx

2.2 Silent Installation

The Patran installation supports silent installations, which run in the background with no graphical interface or interaction with the desktop. Installations running in Silent mode rely on a preconfigured answer file to do the installation. Silent installations are generally used in a batch manner to facilitate installation on many machines on a network

Creating the Answer file

To create the answer file you need to run the Patran installation in normal (GUI) mode with a special switch which instructs the installation to record all of your answers in a specified answer file. Here is an example of the command:

```
z:\patran_20xx_windows.exe -r [-fl"c:\location\filename"]
```

The command assumes that the installation program is being executed from the Patran DVD-ROM mounted on drive z:, the "-r" switch instructs it to generate the answer file and the optional "-fl" switch specifies the location and name of the answer file. (The brackets around the "-fl" switch indicate that it is optional. You do not need to type the brackets.) If the -fl switch is not specified, the answer file will be created as follows:

```
c:\windows\setup.iss
```

Running the Silent mode installation

To run installation in silent mode use the "-s" switch and specify the answer file in this manner:

```
z:\patran_20xx_windows.exe -s -fl"c:\location\filename"
```

Note: Please note that the switch fl in this example is a one, not an L.

2.3 Licensing Installation¹ (Optional)

Patran uses FLEXlm based licensing. If you already have FLEXlm setup as a license server, you do not need to complete this installation.

You will need to have a FLEXlm server on your Windows workstation or on a UNIX workstation on the same TCP/IP network.

To install FLEXlm:

1. Select MSC.Licensing from the main menu in the Setup Wizard.
2. A **Server Install** installs the FLEXlm server (Note: It is highly recommended that you first acquire authorization codes from MSC). The Setup Wizard will prompt you for an existing license.dat file (supplied by MSC), and will start the appropriate Windows services. For additional information see [Installing the MSC.License Server, 121](#).

¹ A FLEXlm 11.6 license server is required for all platforms. If your installation points to an older license server, you will have to install the new FLEXlm license server.

2.4 Upgrading an Existing Installation

Upgrading an existing Patran installation is a manual operation and requires the following steps:

1. Follow the steps in [Creating a New Installation](#). This will create a parallel Patran directory. For example,

```
dir c:\MSC.Software\Patran
06/25/98 12:16p <DIR> 20xx
06/25/98 12:16p <DIR> 20yy
```

If you do not have enough disk space for parallel directories, uninstall the existing installation. But first make sure to copy the customization files listed below, however. See [Uninstalling, 25](#).

2. Copy the following customization files from the old installation directory to new installation:
 - p3_printers.def
 - p3_trans.ini
 - p3epilog.pcl
 - p3toolbar.def
 - p3quickpick.def
 - settings.pcl
 - p3manger_files*.cfg
 - p3manger_files**.cfg
3. Copy any customized template databases from the old installation to a staging area and open each one by running Patran from the new installation. The databases will be converted to the new database schema. Once this is complete, you can copy them to the new installation area.
4. Once you have completed testing the new installation or are comfortable using the new version, you can uninstall the previous installation.

2.5 Optional Steps

Changing Fonts on Windows

Patran on Windows uses fonts as defined under

Control Panel\Display\Settings\Advanced

Large fonts are not recommended as they may, depending on monitor size and screen resolution, distort some forms.

Installing 3Dconnexion Spaceball

Patran supports the 3Dconnexion Spaceball 4000, 5000 and SpacePilot (tested driver version 2.6.5.3). Follow the SpaceWare installation instructions for these products. No additional steps are required for use with Patran. You can obtain these instructions, as well as the latest drivers, at the 3Dconnexion web site, www.3Dconnexion.com/software.

Setting the Startup Directory

Patran runs from and stores database, session, and journal files in certain directories. If invoked from a DOS prompt, the current working directory is selected. If invoking from the Start menu or double clicking on the Patran icon, Patran uses the shortcut's "start in" directory. This can be edited by using the right mouse button and selecting "Properties." If this is not set, then Patran starts in the user's home directory. If it cannot find it, it then looks for the HOMEPATH environment variable to define the startup directory. If no variables are set then the root directory (C:\) is used. Normally, the Windows administrator should set up each account with a home directory. The startup directory can also be set using the Set Working Directory to Database Location toggle on the File/New or File/Open forms ([New...](#) (p. 60) in the *Patran Reference Manual*).

Note that unlike the UNIX version, you can run Patran on Windows using a path name that contains spaces. However, this is not supported because several third party products and modules do have problems with spaces.

Patran uses %windir%\temp as the startup directory by default. This usually resolves to:
c:\winnt\temp

Enabling more than 2.0 GB of Memory Access

The following steps will enable access to more than two Gigabytes of memory for Patran with these 32 bit architected operating systems: On Windows 64, the 64 bit version of Patran can access as much memory as your machine has installed. Please see the [Microsoft Windows Requirements](#) (Ch. 5) for more information.

- Windows NT Server Enterprise Edition (NT 4.0 SP3 and above)
- Windows 2000 Advanced Server
- Windows 2000 Datacenter Server
- Windows XP Professional
- Windows 2003 Server

Modify boot.ini File

Administrative privileges are required.

1. Open Windows Explorer
2. On the **Tools** menu, click **Folder Options**.
3. On the **View** tab, click **Show hidden files and folders**, clear the **Hide protected operating system files** check box, and then click **OK**.
4. In the root folder (usually, C:\), locate the boot.ini file and remove its read-only attribute by right-clicking the file, choosing Properties and clearing the **Read-only** check box.
5. Open the boot.ini file in a text editor, and then add the **/3GB** parameter to the ARC path, as shown in the following example:

```
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Professional  
3GB" /fastdetect /3GB
```

6. On the **File** menu, click **Save**.
7. Restore the read-only attribute to the Boot.ini file.

Here's an example of a modified boot.ini file:

```
[boot loader]  
timeout=10  
default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS  
[operating systems]  
multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Professional  
3GB" /fastdetect /3GB
```

A reboot is required to start Windows with the /3GB parameter. After rebooting, the process is complete. Patran should now be able to access up to a maximum of 3GB of memory. Check to make sure that the computer's total virtual memory is not limited to less than 3 GB.

Note: With this switch, Patran will still only use up to 2 GB, but if other applications are using memory, Patran will use the extra memory available up to 3 GB.

2.6 Module and Preference Setup

Analysis Preferences Setup

You can customize the MSC Nastran, MD Nastran, Marc, Dytran, ABAQUS, ANSYS or other 3rd party Preferences to automatically submit jobs from the Patran analysis forms. Edit the file `p3_trans.ini` in the Patran installation (`$P3_HOME`) to point to the correct location and machine name where the solver resides.

There is an entry in `p3_trans.ini` for each analysis preference, analysis module and version. The following example shows the entry for MSC Nastran:

```
[Nastran]
Hosttype=Windows
Scratchdir=
Acommand20xx=c:\MSC.Software\MSC.Nastran\bin\nast20xx.exe
Host20xx=LOCAL
```

This file can be edited using Configuration Tool. Run this tool as part of the installation process or anytime after from

```
Start>Programs>MSC.Software>Patran 20xx>Configuration Utility
```

The Browse button on the analysis code subforms will bring up a directory tree dialog box so you can navigate to your analysis code installation. The Locate button will try to find your analysis code installation using information from the registry.

Pro/ENGINEER Access Setup¹

There are two methods to import Pro/ENGINEER part files. The first involves conversion to a Parasolid file and does not require Pro/Engineer to run in the background. The second method imports Pro/ENGINEER part files by actually running Pro/ENGINEER in the background and executing a Pro/Toolkit program. For this reason, any workstation that will access Pro/ENGINEER part files must be able to execute Pro/ENGINEER (i.e. the software must be executable and have valid licenses) using this method.

Note: To use the CAD Access features on Windows 64 machines, the Microsoft Visual C++ 2008 SP1 Redistributable Package (x86) is installed as part of the Patran installation.

1. During the Patran installation, you will be prompted for the command to run your Pro/ENGINEER software. Enter the path in the dialog box, for example:

```
/bin/proe
```

¹A Pro/ENGINEER installation is no longer needed if you use the Import to Parasolid feature to import your Pro/E files.

2. Next, you need to configure Patran for use with WildFire 3 and earlier, or WildFire 4. This will configure the MSCP_PROE_PREWF4 environment variable for your installation. Please see the table below for the correct setting for your version of Pro/E:

For WildFire 3 or earlier	YES
For WildFire 4	NO

If you do not know the location of your Pro/E installation or version, you can change or add the environment variables in P3_TRANS.INI after your have finished the installation: The two environment variables are:

```
MSCP_PROE_CMD=d:\proe\bin\proe2000i.bat
```

and

```
MSCP_PROE_PREWF4=YES or NO
```

See [Environment Variables, 50](#) for additional information.

The following notes are applicable to the Import to Native Patran Geometry method:

The Pro/ENGINEER Wildfire release introduced the following platform changes:

- IBM AIX platform unsupported. Existing Patran translator is still available for pre-Pro/ENGINEER Wildfire release.

The following is necessary for customers to use the Patran Pro/ENGINEER translator with Pro/ENGINEER after January, 2004:

- PTC Important System Notice - Timeout <http://www.ptc.com/go/timeout/>

For Pro/ENGINEER 2001:

- Download NMSD.exe and follow PTC instructions.

For Pro/ENGINEER Wildfire:

- Download NMSD.exe and follow PTC instructions.
- Download wildfire datecode 2003490 and follow PTC instructions.

The Pro/ENGINEER Wildfire 2.0 release introduced the following platform changes:

- HP-UX and SUNS supports 64-bit only. Patran translator compatible with pre-Pro/ENGINEER Wildfire 2.0 and Pro/ENGINEER Wildfire 2.0 release. If running Pro/ENGINEER Wildfire 2.0, the HP-UX and/or SUNS platform must be a 64-bit capable machine to run the Patran translator

Pro/ENGINEER Wildfire 3.0/4.0

- Linux is supported for Import to Parasolid
- The p3_ProE and p3_ProENGINEER executables are built using Pro/ENGINEER version 2000i and therefore will not work with earlier versions of Pro/ENGINEER.

Running Pro/ENGINEER Access Remotely

You may convert a Pro/ENGINEER part file into a .geo file outside of Patran by running the p3_proengineer executable directly. This must be done on a system with Pro/ENGINEER installed and requires a FLEXlm license for Pro/ENGINEER Access.

1. Set the MSCP_PROE_CMD environment variable (see [Environment Variables, 50](#) for additional information).

```
set MSCP_PROE_CMD=d:\proe\bin\proe2000i.bat
```

2. Execute the p3_proengineer.exe script from the Patran installation.

It is possible to create an installation that contains only the Pro/ENGINEER Access (by selecting only Pro/ENGINEER Access in mscsetup). You may not, however, simply copy the following script since it requires files included in the installation.

```
$P3_HOME\bin\p3_proengineer +prt<partfile> pro_wait
```

For example:

```
$P3_HOME\bin\p3_proengineer +prttest.prt pro_wait
```

Unigraphics Access Setup¹

Unigraphics Access requires a UG/Gateway license from Unigraphics Solutions. This is a requirement by Unigraphics Solutions for all 3rd parties using their UG/OPEN Toolkit.

Unigraphics UG NX 6.0 Access is recommended for this version of Patran and is installed by default if you use the Full installation option. It is not recommended that both UG NX 4.0 and 5.0 both be installed. This configuration has not been tested and could lead to stability issues. If you intend to use UG NX 4.0 or earlier, you will need to choose the User Selectable option from the installation window and select UG NX 4.0 Access for it to be installed. You also need to set the environment variable:

```
setEnv('MSC_Pre_NX5_License','YES');
```

If you have an existing UG/Gateway FLEXlm license, you must point to that license server or file with the UGII_LICENSE_FILE (UG NX 4.0 or earlier) or UGS_LICENSE_SERVER (UG NX 5.0) environment variable. If you do not have an existing UG/Gateway license, you must purchase it from your local UG sales office.

Note: The Pre-NX5 binaries are not compatible with the 64-bit Patran database.

A work-around is to perform the import using the 32-bit Patran and then open the database with 64-bit Patran. The limitation with this work around is that the interoperability with editing features will not work. If this functionality is desired, you will need to continue using the 32-bit version of Patran.

¹ Parasolid Modeling License

Due to royalty license requirements for Parasolid Modeling, a Parasolid Modeling License, available from MSC.Software, is required to access these features.

An alternate solution is to export Parasolid files from Unigraphics and import them into Patran. This method does not require UG/OPEN and the associated UG/Gateway license. Use of this method does not, however, allow access to UG assembly import or parameter and feature update.

Caution: If a UG installation exists on the same machine as Patran, the UG environment variables can cause problems with Patran UG Access. To avoid this, place the following in the \$P3_HOME/site_setup.pm file:

```
setEnv('UGII_BASE_DIR','', 'OverWrite');  
setEnv('UGII_ROOT_DIR','', 'OverWrite');  
setEnv('UGII_SCHEMA','', 'OverWrite');  
setEnv('UGII_OPTION','', 'OverWrite');
```

I-deas Access Setup

I-deas Access requires Patran and a UGS I-deas 12 NX installation on the same machine.

To import an I-deas model file (.mfi) into Patran, you must first run I-deas 12 in OpenBatchDesign mode (possibly also known as Master Modeler mode).

```
%IDEASROOT%\bin\ideas -n OpenBatchDesgin
```

Then you can run Patran and initiate the I-deas import. Please, ensure the IDEASROOT environment variable has set proper value before executing Patran.

IDEASROOT is the path to the I-deas-12 installation,
e.g. IDEASROOT = C:\UGS\IDEAS12

Note: Please ensure that the IONA directory is installed under IDEASROOT.

Also see [Environment Variables, 50](#).

Patran Thermal Setup

The following are the only supported compilers for Patran Thermal:

Windows (32 bit) platforms:

- Microsoft Visual Studio 2005 SP1
- Intel Fortran, Version 9.1, build 034 or later

Windows (64 bit) platforms:

- Microsoft Visual Studio 2005 SP1 (X64 Compilers and Tools feature must be selected during install)
- Intel Fortran Compiler for EM64T-based applications version 9.1 Build 20070109 Package ID: W_FC_C_9.1.034

64 bit Version

Assuming that the compilers are installed in each manufactures default location, to execute the 64-bit version of Patran Thermal from the 32-bit version of Patran, define the environment variable RUN64 with a value of “yes” (lower case). Any other value will not invoke the 64-bit Patran Thermal executables.

```
setenv RUN64 yes
```

The compilers and appropriate libraries are referenced in the Patran Thermal shell scripts. If you wish to place compilers and/or libraries in different locations, their paths and references in the Patran Thermal shell scripts will need to reflect these changes. The RUN64 environment variable is the test switch that selects the appropriate compiler, linker, and path options.

Note: The above environment variable is not necessary when running Patran Thermal from the 64-bit version of Patran. Only the 64-bit version of Patran Thermal is accessible when running from the 64-bit version of Patran.

Microsoft Internet Explorer

Installation of the compiler may require Microsoft (MS) Internet Explorer (IE).

MSDN

If you will be installing MicroSoft .NET 2005 only as a requirement for using Patran Thermal then it is not necessary to install MSDN. The request to install MSDN is made near the end of compiler installation. MSDN may be installed as an option any time should the compiler be used also as development tool.

General Installation Notes

It is generally simpler, if space allows on the C : drive, to select the default locations for the compiler installations. Both compilers will then be located in the same parent directory which is a requirement for the usage of the Patran Thermal preference.

If the compilers are installed prior to the installation of Patran Thermal then the Patran installation wizard will automatically modify the scripts which specify the location of the compilers. If compilers are not installed prior to the installation of Patran Thermal a warning will be issued to the installer that the compilers need to be installed before the Patran Thermal module can be used.

Flightloads and Dynamics Setup

Flightloads and Dynamics supports separate “interactive” and “batch” locations of the MSC Nastran executable. Interactive MSC Nastran is used for spline verify, aero model import and loads extraction from aerodynamic/aeroelastic databases. Batch MSC Nastran is used for running analyses. The interactive MSC Nastran executable must be on the local machine (i.e. the system running Flightloads).

1. Create an environment variable under Control Panel/System/Environment as follows:

```
MSCP_FLDS_MSG_FILE=$P3_HOME/flds.msg
```

2. Edit `p3_trans.ini` file in the Patran `$P3_HOME` directory. For additional information on setting values in this file see [Environment Variables, 50](#).

3. In the `p3_trans.ini` file define `Alocalcommandxxxx` to point to the MSC Nastran command program for interactive processes. This must be a local installation of MSC Nastran Version xxxx, for example:

```
Alocalcommand200n=c:\msc\bin\nast200n.exe
```

4. Set the `Acommandxxxx` environment variable to point to the MSC Nastran executable for batch processes (and non-Flightloads MSC Nastran execution):

```
Acommand200n=c:\msc\bin\nast200n.exe
```

5. Create a new shortcut either as a desktop icon or in your Start menu. Under Properties\Shortcut for this new item, set “Target” to:

```
$P3_HOME\bin\patran.exe -ifile init_fld.pcl.
```

Substitute `$P3_HOME` with the actual installation directory path. Use this shortcut to start MSC.Flightloads. This icon can be created at the time of installation by answering Yes to the prompt for creating a Flightloads icon.

Analysis Manager Setup

Below is a brief overview of the process for installing and configuring the Analysis Manager for a typical, standard installation. The Remote and Queue Manager services will be installed automatically by the install program.

1. Choose Analysis Manager from the main Patran installation window, see [Creating a New Installation, 6](#) for more information.
2. No other programs should be running when Analysis Manager is installed.
3. Select the location where you want the Analysis Manager installed.
4. Review the installation information and click on Next.
5. If you have MSC Nastran installed, click on browse to point Analysis Manager to it’s location.
6. If you have Marc installed, click on browse to point Analysis Manager to it’s location.
7. Choose whether or not you want Analysis Manager configured automatically, or if you would like to configure it manually.

Manually configuring Analysis Manager

These services generally should not be run as the LocalSystem!

1. Change the Log On account of the services. This step is optional but highly recommended. Under the “Start” menu select “Settings | Control Panel | Administrative Tools | Services”. Find the MSCRmtMgr_20xx and MSCQueMgr_20xx named services and right-click on each and select “Properties”. Then select the “Log On” Tab. Turn ON the “This account” toggle and then enter the non-administrator account and password that will manage the configuration. Do this for both services. Then right-click on each service and select “Stop”. Then right-click on each service and select “Start”. Now the services are running as the user/account you have chosen. Network resources such as shared folders are sometimes not accessible by the default LocalSystem account so it is necessary to change the MSCRmtMgr_20xx service account to another user if Analysis jobs access network shares via include files or any other means. The MSCQueMgr_20xx service only writes to local files in the AM install path (unless it is installed over a network share) so it isn't as sensitive to which account it runs as.
2. On all machines that will run analysis jobs (MSC Nastran, Marc, ABAQUS, etc.) the Remote Manager service must be installed and started for proper communication. If some of these machines are Unix machines, see [Analysis Manager Setup, 19](#) in [Installing on UNIX and LINUX, 27](#).
3. Choose the machine that will act as the “Master Host.” On this system must install and start a Queue Manager service, which schedules analysis jobs.
4. Configure the Analysis Manager. Login to the “Master Host” machine and execute the Analysis Manager.

```
$P3_HOME/bin/p3analysis_mgr
```


When the interface appears, double click on the Administration tree tab. You may get a message saying no configuration files exist. Ignore this! Enter an Administrator account name.
5. Choose “Applications” to add an application definition. This will typically be MSC Nastran, Marc, or ABAQUS.
6. Choose “Physical Hosts” to define the machines that will run analyses (“Analysis Hosts”).
7. Choose “AM Hosts” to define the application paths on the physical hosts. Note that each physical host may have multiple “AM Host” definitions (i.e. one for MSC Nastran, one for Marc, one for ABAQUS, or one for each different version of these programs that are to be accessible).
8. Choose “Disk Space”. Click on each AM Host definition under this tree tab. The defaults are c:\tmp. Change them if you need to. The analyses are run in these directories.
9. Save the configuration files under “Queue | Save Config Settings.”
10. Stop and start the Queue Manager (“Queue | Stop/Start QueMgr”).
11. Test the configuration by selecting “Administration” in the tree tab and pressing the “Test Configuration” button. If all the tests passed, the Analysis Manager should now be able to successfully run from within Patran.

SuperModel¹

SuperModel requires the following:

1. An Patran installation.
2. An installation of the Analysis Manager. See [Analysis Manager Setup, 19](#). MSC Nastran must be available somewhere on the network and the Analysis Manager configured for proper access.
3. Patran customization tools and the MSC Nastran Preference. These should be selected as part of the standard Patran installation.
4. A File Manager server and client. The server and client can be the same machine or different machines.

Note: Supermodel is not available with MD Patran.

A desktop icon is created to launch SuperModel. SuperModel is launched with the following command if done manually from a command prompt:

```
% $P3_HOME/patran -ifile init_sm.pcl -stdout -synchronize
```

File Manager Service

You will be asked if you wish to install the file manager service (smdl_fm_server, PowerRPC Portmapper) during the installation procedure. An administrative username is required for this installation. Regardless of whether you install the file manager or the file manager service resides on another machine, you will be required to identify the machine running the service, and it's assigned number (usually the default is fine unless your system administrator has assigned another number). Fully qualified locations (path) of the file hierarchy directory, local, and remote workspaces are also requested as input for a standard installation. Usually the defaults are fine after the initial hierarchy location is identified. If the initial hierarchy location does not exist, it will be created as well as the other workspaces if necessary. When the file manager service is installed, Patran is run as part of the installation procedure and you should see the following messages among others in the Patran command line for successful installation:

```
smdl_fm main_int_database()
$# Initializing the FileManager Database
$#!!!SUCCESSFULLY INITIALIZED FILEMANAGER DATABASE!!!
smdl_fm main_templates()
$#Initializing Default File Types
$#!!!SUCCESSFULLY ESTABLISHING DEFAULT FILE TYPES!!!
$#!!!SUCCESSFULLY ESTABLISHING DEFAULT FILE TYPES!!!
```

Quit Patran to complete the installation.

¹Before attempting a SuperModel installation, it is highly recommended that you consult the SuperModel Installation Guide provided using the on-line documentation. Generally this means you should install Patran, its documentation, the Analysis Manager, the MSC Nastran Preference, and the customization tools first and then return to do the SuperModel installation.

If you need to reinstall the File Manager service, you may need to remove the File Manager repository directory that you specified in the File Manager installation. If you have problems, please consult the SuperModel Installation Guide as previously mentioned or contact your local MSC Application Engineer.

Tutorials (Formerly Acumen)

Acumen is now known as Tutorials and is an integral part of Patran installed automatically and configured to run a standard Acumen demo (hello_world) from the Help | Tutorials menu. No external environment variables need to be set to run the Help | Tutorials application. The integrated Tutorial system is backwards compatible with existing Acumen applications. The ACUMEN_HOME environment variable can be set to P3_HOME or be undefined to allow the application to use the Tutorial system code. Standard Acumen environment variables as documented in Acumen manuals continue to work as advertised.

The Acumen application can still be invoked from the command prompt or the Patran desktop icon properties can be modified as such:

```
$P3_HOME\bin\patran -iam MSC.ACUMEN
$P3_HOME\bin\patran -iam MSC.ACUMEN_RunTime
$P3_HOME\bin\patran -iam MSC.ACUMEN_RunTime -ifile aa_init.pcl
```

Patran Enterprise Materials

You will be asked for the hostname and port of the computer hosting the Integrated EMV (Enterprise MVision) client. This information is recorded in a properties file. You can edit this file at any time after installation to make changes.

```
$P3_HOME\IntegratedClient\config\MscSdmIC.properties
```

The site_setup.pm file located in \$P3_HOME points to the location of this properties file. Locations of the EMV message file and shared library are set in the emv_ic.pm located in \$P3_HOME.

Documentation

Patran documentation exists in \$P3_HOME in the helpfiles directory. Both PDF and HTML versions exist. The latest available documentation for MSC Nastran and Marc are also available in PDF format if unloaded from the delivery media. Patran’s context sensitive help system is accessed by pressing the F1 key for the currently active form. The HTML based help system should work automatically (in the patran.pl file in \$P3_HOME\bin). Check the following variables if not.

Variable	Description
P3_HELP_MODE	Set this to “2” to indicate the HTML helpfile system is to be used.
P3_BRW_HELP	Set this to the location of the browser you wish to use, e.g., C:\Program Files\Internet Explorer\iexplore.exe
P3_HELP_DIRECTORY	Set this to the location of the HTML helpfile system, e.g., \$P3_HOME\helpfiles\html_patran\ To point to a network location on windows, see the example below.

```
setEnv('P3_HELP_DIRECTORY','\\\\nighthawk\\product_doc\\Patran\\html  
_patran\\',overwrite);
```

2.7 Known Limitations

Please be aware of the following limitation or requirements:

- To input Unigraphics Part files, you must use the NTFS file system type (not FAT).
- With the Windows display set to large fonts, or with the desktop scheme set to large fonts, some forms may have spacing problems.
- As per the Windows specification frame labels appear as part of the frame, this may change button placement on user-written PCL forms when compared to UNIX
- The history window does not have a horizontal scrollbar on Windows. To see long session commands, select them in the history window and they will appear in the command line. Use the arrow keys to scroll along the command line.
- Several window related functions available on UNIX such as Window Layering, Hide Icon, and Main Form Preferences are not applicable to the Windows environment and are not available on Windows.
- The PCL function `ui_set_fixedfont` is not available on Windows.
- Since menus and icons are dockable toolbars on Windows, F1 context sensitive help works only for application forms. Use the Help menu to access online help for toolbars.
- Diagnostics do not display to a DOS window by default. See [Command Line Arguments, 69](#) for information on the `-stdout` argument.
- CGM graphics output is not supported.

2.8 Uninstalling

To uninstall, use the Control Panel, Add/Remove Programs.

3

Installing on UNIX and LINUX

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3.1 Creating a New Installation

Installing using Downloaded Files

1. Login as root
2. “cd” to a temporary directory with enough disk space. Create a subdirectory and “cd” into the subdirectory.
3. Download the delivery file from Solution Download Center. If you previously downloaded the file please proceed to the next step.
4. Execute the patran_20xx_<platform>.bin script and follow the instructions in the product installation guide for the remainder of the installation process.
5. Executing the installation script may require adding execution privilege:
 - `chmod +x install.script`
6. Cleanup: After installation is complete – you may remove the subdirectory created in Step 2 above.

Installing from a DVD-ROM

1. First mount the DVD-ROM as explained below in [Mounting the DVD-ROM, 30](#)
2. Log in to your system. In general, you do not need Root or Superuser privileges except as follows:
 - To possibly mount the DVD-ROM.
 - To possibly create the installation directory.
 - To start the FLEXlm License Daemon.
 - To install, configure and/or start the Analysis Manager Daemons.
3. Invoke the installation program¹ by typing at the command prompt:

HP: `patran_20xx_hpux.bin`

IBM: `patran_20xx_aix.bin`

Sun Solaris: `patran_20xx_solaris.bin`

LINUX: `patran_20xx_linux.bin`

You may have to change directories to /CDROM. This may take a few minutes to initialize. Please be patient.

4. Follow the on-line installation instructions from this point².

¹Java Runtime Environment (JRE).

²Installation Log File

`/installocation/log.txt.`

Mounting the DVD-ROM

The DVD-ROM mount procedure may vary depending on the setup of your operating system. These steps represent a general mounting procedure. Tools to simplify the process are often available as part of user environment packages such as the Common Desktop Environment (CDE). Consult your operating system documentation for the best method of mounting DVD-ROM devices.

1. Create a directory for the DVD-ROM, if it does not already exist (not required for LINUX installations):

```
# mkdir /CDROM
```

2. Mount the DVD-ROM drive by issuing one of the following commands:

HP: `# mount -F cdfs -o rr /dev/dsk/c0tUd0 /CDROM`
where U = the SCSI controller id for the CD-ROM drive

IBM: `# mount -rv cdrfs /dev/cd0 /CDROM`

Sun Solaris: You do not need to enter a mount command, since the Patran DVD-ROM will automatically be mounted by the Solaris vold daemon. The actual mount point is specified in the file, `/etc/vold.conf`, which by default, is `/cdrom/cdrom0`. If this directory does not appear after inserting the DVD-ROM, make sure the vold daemon is running.

LINUX: The Patran DVD-Rom will automatically mount if autofs is present and configured properly. If it does not, try one of the following commands:

```
# mount /mnt/cdrom
```

```
# mount /dev/cdrom
```

LINUX provides a “user” option for mounting that allows non-root users to mount a DVD-ROM. This option prohibits direct execution of DVD-ROM resident files. If when attempting to execute `mscsetup` you receive a “Permission Denied” error, you must remount the DVD-ROM with the following command:

```
# mount -o exec /mnt/cdrom
```

3. Remove the DVD-ROM, by entering:

```
# cd <other_dir>
# umount /CDROM (/mnt/cdrom on Linux)
```

where `<other_dir>` is any directory, other than `/CDROM`. Press the eject button on the DVD-ROM drive. On some systems you may need to enter:

```
# eject cdrom
```

Select Product to Install:

Patran is the default product to install. However, you may install one or all of the following Patran vertical products. You may rerun the installer to add, modify or delete any of these products. Only a single installation is required for all these products.

Product	Description
Patran 20xx	The latest version of standard Patran.
Patran 20xx (MD Nastran Enabled)	The latest version of standard Patran enabled to access MD Nastran functionality.
MSC FEA 20xx	A Patran and MSC Nastran package combination where Patran and MSC Nastran operate in an interlocked manner. It is necessary to install MSC Nastran separately or have an existing MSC Nastran installation.
MSC AFEA 20xx	A Patran and Marc package combination where Patran and Marc operate in an interlocked manner. It is necessary to install Marc separately or have an existing Marc installation.

For all products above it may be necessary to configure the setup to access the necessary solver codes. This is explained in [Analysis Preferences Setup, 38](#).

Select Setup Type:

In some instances the following installation options may be presented:

- **Full** installs all modules, options and preferences.
- **User Selectable** allows you to select which modules, options and preferences are installed. If you select custom, you will be presented with a form to select individual components. Be patient when turning on or off selectable items. Sometimes there is a noticeable delay. Do not click the mouse again until you see the toggles turn on or off.
- **Common Features** installs a reduced set of the most frequently used modules, options and preferences.
- **Client** configures a workstation to run from a central file server.

The table below lists some of the selectable items that require information from the user during installation or subsequent steps to enable full functionality access . Not all of these may be presented to you as selectable options.

Product Set

Analysis Preferences

Analysis Manager

Documentation

Flightloads

Patran Materials Enterprise

Pro/ENGINEER Access

Patran Thermal

SuperModel

UG NX Access

Catia V4 Access

Catia V5 Access

Additional Information

See [Analysis Preferences Setup](#), 38.

See [Analysis Manager Setup](#), 44.

See [Documentation](#), 47.

See [Flightloads and Dynamics Setup](#), 43.

See [Patran Enterprise Materials](#), 47.

See [Pro/ENGINEER Access Setup](#), 38.

See [Patran Thermal Setup](#), 43.

See [SuperModel](#), 45.

See [Unigraphics Access Setup](#), 40.

See [CATDirect Setup \(V4\)](#), 41.

See [CATIA v5 Access Setup](#), 42.

Invoking Patran (and its verticals)

Patran and its verticals (i.e., MSC FEA) can be invoked in a shell window by typing one of the following:

```
% $P3_HOME/bin/p3  
% $P3_HOME/bin/patran  
% $P3_HOME/bin/mdpatran  
% $P3_HOME/bin/mscfea  
% $P3_HOME/bin/mscfea
```

where \$P3_HOME is the Patran installation directory. This typically might be:

```
/msc/patran/20xx
```


3.2 Silent Installation

The Patran installation supports silent installations, which run in the background with no graphical interface or interaction with the desktop. Installations running in Silent mode rely on a preconfigured answer file to do the installation. Silent installations are generally used in a batch manner to facilitate installation on many machines on a network

Creating the Answer file

To create the answer file you need to run the Patran installation in normal (GUI) mode with a special switch which instructs the installation to record all of your answers in a specified answer file. The following example is for Linux. For other platforms use appropriate `setup`¹ instead of `setupLinux.bin`

To build response file run installer with the following options:

```
Patran2010_Linux-x86 -options-record response-file-name
```

(response file will be generated at the very end of the installer run)

Running the Silent mode installation

To run installation in silent mode use the following command and specify the answer file in this manner:

```
Patran2010_Linux-x86 -silent -options response-file-name
```

¹See the table in [Creating a New Installation, 28](#) for the actual setup command for the platform of interest.

3.3 Licensing Installation (Optional)

Patran uses FLEXlm based licensing¹. If you already have FLEXlm setup as a license server, you do not need to complete this installation.

You will need to have a FLEXlm server somewhere on your network.

To install FLEXlm:

1. Make sure you select that option when doing the initial installation or as an additional option to install in a subsequent install session. See [Creating a New Installation, 28](#).
2. For additional information see [Installing the MSC.License Server, 121](#).

¹A FLEXlm 11.6 license server is required for all platforms. If your installation points to an older license server, you will have to install the new FLEXlm license server. If you have an older version of FLEXlm installed and need to install a newer version, please see Uninstalling FLEXlm on UNIX.

3.4 Upgrading an Existing Installation

Upgrading an existing Patran installation is a manual operation and requires the following steps:

1. Follow the steps in [Creating a New Installation, 28](#). This will create a parallel Patran directory.
For example,

```
/msc/patran/20xx  
/msc/patran/20yy
```


If you do not have enough disk space for parallel directories, uninstall the existing installation. But first make sure to copy the customization files listed below, however.
2. Copy the following customization files from the old installation directory to new installation:
 - p3_printers.def
 - site_setup
 - p3epilog.pcl
 - p3toolbar.def
 - p3quickpick.def
 - settings.pcl
 - p3manger_files/*.cfg
 - p3manger_files/*/*.cfg
 - app-defaults/*
3. Copy any customized template databases from the old installation to a staging area and open each one by running Patran from the new installation. The databases will be converted to the new database schema. Once this is complete, you can copy them to the new installation area.
4. Once the new version is successfully installed, check the files copied in the previous steps for paths that will not be correct in the new version. Generally, Patran configuration files will not contain explicit paths to other Patran directory. Site specific customizations, however, may have used explicit paths which need to be edited.

3.5 Optional Steps

Enabling Optimal Virtual Memory Access

The Patran system is a collection of 32-bit executables that interact with one another. The main program is the familiar graphical user interface (GUI) component, but many other back-end processors are likely to be invoked during a typical user session. Each individual executable employs standard Unix system calls such as `malloc()` for dynamically allocating virtual memory in sufficient quantities for processing end user requests based on model size and complexity. The theoretical maximum size (program size plus data space) for a 32-bit process is 4GB. However, some operating systems reserve a portion of memory for system functions and therefore limit the total memory available to user processes. This section will describe the issues relevant to each platform and will provide guidance on tuning your system, where possible, to maximize the amount of virtual memory available to Patran.

Hewlett-Packard HP-UX

HP-UX PA-RISC systems do not impose any significant limitation on the usable address space for a typical 32-bit process. Itanium systems running a minimum level of HP-UX 11.23 with patch PHKL_31500 will be capable of supporting user process sizes approaching 4GB. In order to achieve these results you must be certain that your system is configured with adequate RAM and swap space. Please also ensure that your `maxdsiz`, `maxtsiz`, and `maxssiz` kernel parameters are set as described in [Required Hardware & Software Configurations](#), 79 of this guide.

IBM AIX

The AIX operating system divides memory into 256 MB segments. 32-bit executables can access 16 total memory segments (4 GB) but not all segments are available to end-user processes. AIX provides three separate address model options for 32-bit processes: the default memory model, the large memory model, and the very large memory model. Patran is configured to use the AIX very large memory model, which enables up to 2GB of virtual memory per user process on AIX 5.1 and up to 3.25 GB beginning with AIX 5.2. No special system tuning is required to achieve the maximum process sizes indicated above, as long as sufficient physical RAM and swap space resources exist on your system.

Sun Solaris

The Solaris operating system does not impose any significant limitation on the usable address space for a typical 32-bit process. You can expect to achieve a maximum process size of nearly 4GB for Patran if your system is configured with adequate RAM and swap space.

Red Hat Linux

The Red Hat Linux operating system does not impose any significant limitation on the usable address space for a typical 32-bit process. You can expect to achieve a maximum process size of nearly 4GB for Patran if your system is configured with adequate RAM and swap space.

Installing 3Dconnexion Spaceball for Use with Patran

Patran supports the 3Dconnexion Spaceball 4000, 5000, and SpacePilot. Follow the SpaceWare installation instructions for these products. No additional steps are required for use with Patran. You can obtain these instructions, as well as the latest drivers, at the 3Dconnexion web site, www.3dconnexion.com/.

1. Downloaded driver from: `<http://www.3dconnexion.com/downlink.asp>`

From this page you can choose your operating system.

2. Create a "spaceball" directory in `/usr` or `/opt`

By default the directory will be called "magellan".

3. Go into that directory, and install the driver.

4. To invoke it, call `/usr/spaceball/xdriver.static`

The spaceball automatically has translation and rotation in x, y, z turned ON. Right button automatically re-centers the model.

3.6 Module and Preference Setup

Analysis Preferences Setup

You can customize the MSC Nastran, Marc, Dytran, ABAQUS, ANSYS or other 3rd party Preferences to automatically submit jobs from the Patran analysis forms. Edit the file `site_setup` in the Patran installation (`$P3_HOME`) to point to the correct location and machine name where the solver resides.

There is an entry in `site_setup` for each analysis preference, analysis module and version. The following example shows the entry for MSC Nastran¹:

```
setEnv MSCP_NASTRAN_HOST20xx LOCAL
setEnv MSCP_NASTRAN_HOST20yy LOCAL
setEnv MSCP_NASTRAN_CMD20xx /msc/bin/nast20xx
setEnv MSCP_NASTRAN_CMD20yy /msc/bin/nast20yy
setEnv MSCP_NASTRAN_SCRATCHDIR .
```

Each preference requires environment variables that define the location of external analysis executables, file types, etc. These environment variables are set by the `mscsetup` utility during the installation procedure. To modify these variables or set new ones, see [Environment Variables, 50](#) for information on the `site_setup` file.

Pro/ENGINEER Access Setup²

There are two methods to import Pro/ENGINEER part files. The first involves conversion to a file and does not require Pro/Engineer to run in the background. The second method imports Pro/ENGINEER part files by actually running Pro/ENGINEER in the background and executing a Pro/Toolkit program. For this reason, any Patran workstation that will access Pro/ENGINEER part files must be able to execute Pro/ENGINEER (i.e. the software must be executable and have valid licenses) using this method.

1. During the Patran installation, you will be prompted for the command to run your Pro/ENGINEER software. Enter the path in the dialog box, for example:
`/bin/proe`
2. Next, you need to configure Patran for use with WildFire 3 and earlier, or WildFire 4. This will configure the `MSCP_PROE_PREWF4` environment variable for your installation. Please see the table below for the correct setting for your version of Pro/E:

For WildFire 3 or earlier	YES
For WildFire 4	NO

¹The version of a particular analysis code that is run is dependent on the actual path and location of the executable set with these environment variables and not the name of the variable. For example, the `MSCP_NASTRAN_CMD20xx` can point to the MSC Nastran version 20yy executable and the 20yy version will run even though the version is set to 20xx in Patran.

²A Pro/ENGINEER installation is no longer needed if you use the Import to parasolid feature to import your Pro/E files.

If you do not know the location of your Pro/E installation or version, you can change or add the environment variables in P3_TRANS.INI after you have finished the installation: The two environment variables are:

```
MSCP_PROE_CMD=d:\proe\bin\proe2000i.bat
```

and

```
MSCP_PROE_PREWF4=YES or NO
```

Typically this environment variable is set the site_setup file. See [Environment Variables, 50](#) for additional information.

The following notes are applicable to the Import to Native Patran Geometry method:

The Pro/ENGINEER Wildfire release introduced the following platform changes:

- IBM AIX platform unsupported. Existing Patran translator is still available for pre-Pro/ENGINEER Wildfire release.

The following is necessary for customers to use the Patran Pro/ENGINEER translator with Pro/ENGINEER after January, 2004:

- PTC Important System Notice - Timeout <http://www.ptc.com/go/timeout/>

For Pro/ENGINEER 2001:

- Download NMSD.exe and follow PTC instructions.

For Pro/ENGINEER Wildfire:

- Download NMSD.exe and follow PTC instructions.
- Download wildfire datecode 2003490 and follow PTC instructions.

The Pro/ENGINEER Wildfire 2.0 release introduced the following platform changes:

- HP-UX and SUNS supports 64-bit only. Patran translator compatible with pre-Pro/ENGINEER Wildfire 2.0 and Pro/ENGINEER Wildfire 2.0 release. If running Pro/ENGINEER Wildfire 2.0, the HP-UX and/or SUNS platform must be a 64-bit capable machine to run the Patran translator

Pro/ENGINEER Wildfire 3.0/4.0

- Linux is supported for Import to Parasolid
- The p3_ProE and p3_ProENGINEER executables are built using Pro/ENGINEER version 2000i and therefore will not work with earlier versions of Pro/ENGINEER.

Running Patran Pro/ENGINEER Access Remotely

You may convert a Pro/ENGINEER part file into a .geo file outside of Patran by running the p3_proengineer executable directly. This must be done on a system with Pro/ENGINEER installed and requires a FLEXlm license for Pro/ENGINEER Access.

1. Set the MSCP_PROE_CMD environment variable. You may already have this set in the \$P3_HOME/site_setup file (see [Environment Variables, 50](#) for additional information).

```
% setenv MSCP_PROE_CMD /usr/bin/pro
```
2. Execute the p3_proengineer script from the Patran installation.

It is possible to create an installation that contains only the Pro/ENGINEER Access (by selecting only Pro/ENGINEER Access in mscsetup). You may not, however, simply copy the following script since it requires files included in the installation.

```
% $P3_HOME/bin/p3_proengineer +prt<partfile> pro_wait
```

Windows syntax:

For additional information on Patran Pro/ENGINEER Access on Windows, see [Pro/ENGINEER Access Setup, 14](#)

UNIX syntax:

```
% $P3_HOME/bin/p3_proengineer +prttest.prt pro_wait
```

Unigraphics Access Setup¹

Unigraphics Access requires a UG/Gateway license from Unigraphics Solutions. This is a new requirement by Unigraphics Solutions for all 3rd parties using their UG/OPEN Toolkit.

Unigraphics UG NX 5.0 Access is recommended for this version of Patran and is installed by default if you use the Full installation option. It is not recommended that both UG NX 4.0 and 5.0 both be installed. This configuration has not been tested and could lead to stability issues. If you intend to use UG NX 4.0 or earlier, you will need to choose the User Selectable option from the installation window and select UG NX 4.0 Access for it to be installed. You also need to set the environment variable:

```
setEnv('MSC_PRE_NX5_LICENSE','yes');
```

If you have an existing UG/Gateway FLEXlm license, you must point to that license server or file with the UGII_LICENSE_FILE (UG NX 4.0 or earlier) or UGS_LICENSE_SERVER (UG NX 5.0) environment variable. If you do not have an existing UG/Gateway license, you must purchase it from your local UG sales office. A listing of these offices is available on the World Wide Web at:

www.ugsolutions.com/contact/sales.shtml

An alternate solution is to export Parasolid files from Unigraphics and import them into Patran. This method does not require UG/OPEN and the associated UG/Gateway license. Use of this method does not, however, allow access to UG assembly import or parameter and feature update.

¹Parasolid Modeling License

Due to royalty license requirements for Parasolid Modeling, a Parasolid Modeling License, available from MSC.Software, is required to access these features.

Caution: If a UG installation exists on the same machine as Patran, the UG environment variables can cause problems with Patran UG Access. You may have to unset these environment variables or redefine them using the `$P3_HOME/site_setup` file:

```
setEnv UGII_BASE_DIR
setEnv UGII_ROOT_DIR
setEnv UGII_SCHEMA
setEnv UGII_OPTION
```

CATDirect Setup (V4)

CATDirect directly imports CATIA v4 models by spawning the CATIA software in the background. For this reason, both CATIA v4 and CATDirect must be available on the same network, and the correct CATIA environment variables must be set. See [Environment Variables, 50](#) for additional information on CATDirect environment variables.

Running CATDirect Remotely

If you do not have access to CATIA on the same network or workstation as Patran, the CATDirect executables can be installed on the CATIA workstation. These executables generate intermediate Express Neutral files. The Express Neutral file can be imported into Patran on systems which do not have CATIA installed.

The following steps install the CATDirect executables on a CATIA workstation without a local installation of Patran

1. Create an installation directory (`$P3_HOME`) on the CATIA workstation with `bin` and `bin/exe` subdirectories. For example:

```
# mkdir /msc/patranxxxx (/msc/patranxxx = $P3_HOME)
# mkdir $P3_HOME/bin
# mkdir $P3_HOME/bin/exe
```

2. Copy the following Patran CATDirect wrapper links from the Patran installation to the corresponding subdirectories created in step #1.

```
$P3_HOME/site_setup
$P3_HOME/bin/.wrapper
$P3_HOME/bin/p3_catia_express
$P3_HOME/bin/p3_CATIA_EXPRESS
$P3_HOME/bin/exe/p3_catia_express
$P3_HOME/bin/exe/p3_CATIA_EXPRESS
```

3. Add the CATIA environment variables to the new `site_setup` file on the CATIA workstation.

```
# setEnv CAT_UNLOAD /usr/catia/unload
# setEnv CATIA /usr/catia/cfg
# setEnv CAT_CUST ~catadm
# setEnv CATMSTR ~catusr/USRENV.dcls
# setEnv MSCP_CATIA_LANG en_US
# setEnv CATIA_TMP_DIR /tmp
```

For additional information on these variables, see [Environment Variables, 50](#).

4. Edit the local `USRENV.dcls` file (the one referenced by the `CATMSTR` environment variable) with the following lines:

```
alias PATRAN T =
catia.model="/tmp";
```

Where /tmp is the directory referenced by the CATIA_TMP_DIR environment variable.

5. Run p3_catia_express on the CATIA workstation to generate an Express neutral file:

```
% $P3_HOME/bin/p3_catia_express <model_name> -
fsp/<model_directory_path> -t
```

The “-t” option specifies a ASCII Express Neutral file (*.exp). Without this option a binary file (*.bxp) will be generated. Both types of files can be imported into Patran using “File|Import|Express Neutral File”.

CATIA v5 Access Setup

The CATIA v5 Access product is installed from mscsetup located on the second DVD-ROM. This single installation script will install CATDirect, CATIA v4 to , and the CATIA v5 to parasolid products.

- MSC setup will add the following variables to the site_setup file for Catia V5 runtime support when you install Catia Access for IBM AIX, HP/UX, and Windows.

```
# setEnv CATIAV5DIR $P3_HOME/lib/lib3dx
# setEnv CATIAPlat aix_a
# setEnv CATInstallPath $CATIAV5DIR/$CATIAPlat
# setEnv CATDLLPath $CATIAV5DIR/$CATIAPlat/code/bin
# setEnv CATICPath $CATIAV5DIR/$CATIAPlat/code/productIC
# setEnv CATCommandPath $CATIAV5DIR/$CATIAPlat/code/command
# setEnv CATDictionaryPath $CATIAV5DIR/$CATIAPlat/code/dictionary
# setEnv CATReffilesPath $CATIAV5DIR/$CATIAPlat/reffiles
# setEnv CATFontPath $CATIAV5DIR/$CATIAPlat/resources/fonts
# setEnv CATGraphicPath $CATIAV5DIR/$CATIAPlat/resources/graphic
# setEnv CATMsgCatalogPath $CATIAV5DIR/$CATIAPlat/resources/msgcatalog
```

For additional information on these variables, see [Environment Variables, 50](#).

I-deas Access Setup

I-deas Access requires Patran and a UGS I-deas NX installation on the same machine Version 11 is supported for HP HP-UX and IBM AIX. Version 12 is supported for SUN Solaris.

Note: The Orbix daemons need to be installed and in running state.

To import an I-deas model file (.mfi) into Patran, you must first run I-deas in OpenBatchDesign mode (possibly also known as Master Modeler mode).

```
$IDEASROOT/bin/ideas -n OpenBatchDesgin
```

Then you can run Patran and initiate the I-deas import. Please, ensure the IDEASROOT environment variable has set proper value before executing Patran.

The installation will prompt the user for the value of IDEASROOT which needs to be the root installation location of I-deas. IDEASROOT is the path to the I-deas installation,
e.g. IDEASROOT = /UGS/IDEAS12

The installation setup will add the following variables to the `site_setup` file for I-deas runtime support when you install I-deas Access.

```
# setEnv IDEAS_VERSION
# setEnv ORBIX
# setEnv OI_SERVER_NAME
# setEnv IT_CONFIG_PATH
```

Also see [Environment Variables](#) (Ch. 4) in the *Patran Installation and Operations Guide*.

Patran Thermal Setup

64 bit Version

A Assuming that the compilers are installed in each manufactures default locations, to execute the 64 bit version, define the environment variable RUN64 with a value of “yes” (lower case). Any other value will not invoke the 64 bit executables.

```
setenv RUN64 yes
```

As in the past, the compilers and appropriate libraries are referenced in the thermal shells. If you wish to place compilers and/or libraries in different locations, their paths and references in the thermal shell will need to reflect these changes. The RUN64 environment variable is the test switch that selects the appropriate compiler, linker and path options.

Note: Patran is executed as a 32 bit code even if the 64 bit versions of the thermal modules are to be used.

Flightloads and Dynamics Setup

FlightLoads and Dynamics supports separate “interactive” and “batch” locations of the MSC Nastran executable. Interactive MSC Nastran is used for spline verify, aero model import and loads extraction from aerodynamic/aeroelastic databases. Batch MSC Nastran is used for running analyses. The interactive MSC Nastran executable must be on the local machine (i.e. the system running Flightloads and Dynamics).

1. Edit `site_setup` in the Patran `$P3_HOME` directory. For additional information on setting environment variables in this file see [Environment Variables, 50](#).
2. Set the `MSCP_FLDS_MSG_FILE` environment variable to point to `$P3_HOME/flds.msg`:

```
% setEnv MSCP_FLDS_MSG_FILE $P3_HOME/flds.msg
```
3. Set the `MSCP_LOCAL_NASTRAN_CMD200n` environment variable to point to MSC Nastran command program for interactive processes. This must be a local installation of MSC Nastran 200n, for example:

```
% setEnv MSCP_LOCAL_NASTRAN_CMD200n /msc/bin/nast200n
```
4. Set the `MSCP_NASTRAN_CMD200n` environment variable to point to the MSC Nastran executable for batch processes (and for non-MSC.Flightloads MSC Nastran analysis):

```
% setEnv MSCP_NASTRAN_CMD200n /tmp_mnt/msc/bin/nast200n
```

5. Start Patran with one of the following commands:

```
% $P3_HOME/bin/patran -ifile init_fld.pcl
% $P3_HOME/bin/p3      -ifile init_fld.pcl
% $P3_HOME/bin/p3fld
```

Substitute \$P3_HOME with the actual installation directory path.

Analysis Manager Setup

Below is a brief overview of the process for installing and configuring the Analysis Manager for a typical, standard installation, assuming it has been unloaded properly from the DVD-ROM using `mscsetup`.

1. On all machines that will run analysis jobs (MSC Nastran, Marc, ABAQUS, etc.), login to each and start a Remote Manager. This requires that you install using `mscsetup` (or the installation directory \$P3_HOME must be “seen”) on each machine. The Remote Manager daemon must be run on all “Analysis Hosts” for proper communication. This daemon should not be run as root! If some of these machines are Windows machines, see [Analysis Manager Setup, 19](#) in [Installing on Microsoft Windows, 5](#).

```
$P3_HOME/bin/RmtMgr -path $P3_HOME
```

2. Choose the machine that will act as the “Master Host.” This system will run the Queue Manager daemon, which schedules analysis jobs. Login to this machine and execute the administration utility.

```
$P3_HOME/bin/p3am_admin $P3_HOME
```

When the interface appears, enter an administration user. It is not necessary to be root to do this, but it should be the administrator of the Analysis Manager configuration file. The configuration files will be owned by this user.

3. Choose “*Modify Config Files | Applications*” to add an application definition. This will typically be MSC Nastran, Marc, or ABAQUS.
4. Choose “*Modify Config Files | Physical Hosts*” to define the machines that will run analyses (“Analysis Hosts”).
5. Choose “*Modify Config Files | A/M Hosts*” to define the application paths on the physical hosts. Note that each physical host may have multiple “A/M Host” definitions (i.e. one for MSC Nastran, one for Marc, one for ABAQUS, or one for each different version of these programs that are to be accessible).
6. Choose “*Modify Config Files | Filesystems*” to define a filesystem directory for each A/M Host. The defaults are /tmp. The analyses are run in these directories. Press the Apply button to save the configuration files.
7. Test the configuration by selecting “*Test Configuration*” for each of the objects.
8. Select “*Queue Manager*” and start the Queue Manager daemon. If all the tests passed, the Analysis Manager should now be able to successfully run from within Patran.

SuperModel¹

SuperModel requires the following:

1. A full Patran installation.
2. An installation of the Analysis Manager. See [Analysis Manager Setup, 44](#). MSC Nastran must be available somewhere on the network and the Analysis Manager configured for proper access.
3. Patran customization tools and the MSC Nastran Preference. These should be selected as part of the standard Patran installation with.
4. A File Manager server and client. The server and client can be the same machine or different machines.

SuperModel can be launched with the following commands:

```
% $P3_HOME/p3sm  
% $P3_HOME/p3 -ifile init_sm.pcl  
% $P3_HOME/patran -ifile init_sm.pcl
```

Note: Supermodel is not available with MD Patran.

File Manager Server

The following are brief instructions for an initial installion of the File Manager server. If all you need is a client installation only or you are upgrading an existing server or for more details, please consult the SuperModel Installation Guide as mentioned above. You must have superuser privileges to perform this installation.

1. After installing the Supemodel product set, change to the following directory:

```
% cd $P3_HOME/Filemanager/install
```
2. Run the File Manager installation script (it must be run from the above directory):

```
% ./fm_install
```

Perform a server installation. Enter the name of the server machine (the machine you are installing on). Accept the default for all other items unless you have good reason to change them. Read the rest of the instructions from running this script and follow them for a server installation.
3. At this point the script then asks you to initialize the server:

```
% ./initialize_server
```

When the File Manager service is installed, Patran is run as part of the installation procedure and you should see the following messages among others for a successful installation:

```
program 539117062 version 1 ready and waiting  
Initializing the FileManager Database  
!!! SUCCESSFULLY INITIALIZED FILEMANAGER DATABASE !!!  
Initializing Default File Types
```

¹Before attempting a SuperModel installation, it is highly recommended that you consult the SuperModel Installation Guide provided using the on-line documentation. Generally this means you should install Patran, its documentation, the Analysis Manager, the MSC Nastran Preference, and the cutomization tools first and then return to do the SuperModel installation.

```
!!! SUCCESSFULLY ESTABLISHING DEFAULT FILE TYPES !!!  
!!! SUCCESSFULLY ESTABLISHING DEFAULT FILE TYPES !!!
```

4. Add a File Manager administrator user name to the end of the following file where the Filemanager repository was specified in the second step above:

```
smdl_fm_administors
```

If this does not work, then try again by stopping the `inetd` service as explained in the second step above when running `fm_install`. Then stop the File Manager daemon by querying the system for its pid and referencing it in the kill command.

```
% ps -ef | grep msc  
% kill <pid>
```

Restart the `inetd` daemon.

Remove the File Manager repository directory created in the second step above.

```
% rm -r <smdl_fm_repository>
```

Then repeat the above steps. If you continue to have problems, please consult your MSC Application Engineer.

Tutorials (Formerly Acumen)

Acumen is now known as Tutorials and is an integral part of Patran installed automatically and configured to run a standard Acumen demo (`hello_world`) from the Help | Tutorials menu. No external environment variables need to be set to run the Help | Tutorials application. The integrated Tutorial system is backwards compatible with existing Acumen applications. The `ACUMEN_HOME` environment variable can be set to `P3_HOME` or be undefined to allow the application to use the Tutorial system code. Standard Acumen environment variables as documented in Acumen manuals continue to work as advertised.

The Acumen application can still be invoked from the command prompt or the Patran desktop icon properties can be modified as such:

```
$P3_HOME\bin\patran -iam MSC.ACUMEN  
$P3_HOME\bin\patran -iam MSC.ACUMEN_RunTime  
$P3_HOME\bin\patran -iam MSC.ACUMEN_RunTime -ifile aa_init.pcl
```

Patran Enterprise Materials

You will be asked for the hostname and port of the computer hosting the Integrated EMV (Enterprise MVision) client. This information is recorded in a `properites` file. You can edit this file at any time after installation to make changes.

```
$P3_HOME/IntegratedClient/config/MscSdmIC.properties
```

An environment variable is set in `site_setup` in `$P3_HOME` to point to this file. This environment variable can be set manually also. For example in C-Shell:

```
% setenv MSC_SDM_IC_PROPERTIES_FILE  
$P3_HOME/IntegratedClient/config/MscSdmIC.properties
```

The following script can be run after installation to change the server and port information:

```
$P3_HOME/IntegratedClient/install/configure_IC
```

Documentation

Patran documentation exists in `$P3_HOME` in the `helpfiles` directory. Both PDF and HTML versions exist. The latest available documentation for MSC Nastran and Marc are also available in PDF format if unloaded from the delivery media.

Patran's context sensitive help system is accessed by pressing the F1 key for the currently active form. In order for the HTML based help system to work properly, the following variables must be set (check the `site_setup.pm` file in `$P3_HOME`):

Variable	Description
P3_HELP_MODE	Set this to "2" to indicate the HTML helpfile system is to be used.
P3_BRW_HELP	Set this to the location of the browser you wish to use, e.g., /tools/bin/netnscape
P3_HELP_DIRECTORY	Set this to the location of the HTML helpfile system, e.g., \$P3_HOME/helpfiles/html_patran

4

User Environment

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4.1 Environment Variables

UNIX Environment Variables

The file `site_setup`, located in the installation directory, provides a central file for setting environment variables. The file is a standard Bourne shell script that is included in the Patran run shell when you execute Patran.

You can enter any standard Bourne shell command in this file. You can also set environment variables in this file using the `setEnv` command. The Patran startup script interprets this as the proper environment variable command for your current shell (i.e. Bourne or Korn shell). For example, to set the path for MSC Nastran 20xx to `/msc/msc20xx/bin/nastran`, add the following line to `site_setup`:

```
% setEnv MSCP_NASTRAN_CMD20xx /msc/msc20xx/bin/nastran
```

This is equivalent to setting the `cshell` variable:

```
% setenv MSCP_NASTRAN_CMD20xx /msc/msc20xx/bin/nastran
```

Available environment variables are listed in [Table 4-1](#). Note that some variables are specific to UNIX or to Windows. This is noted in the table.

Windows Environment Variables

Patran on Windows supports most of the same environment variables as the UNIX versions. To set environment variables, use Control Panel\System\Environment. You can use a DOS command line to define a variable or the `site_setup.pm` file.

Setting environment variables on the DOS command line uses the `set` command. The table lists examples in UNIX form (using `setenv`). For example the following UNIX command:

```
% setenv MSC_LICENSE_FILE /msc/msc_licensing/licenses/license.dat
```

is equivalent to the following `set` command in DOS:

```
> set MSC_LICENSE_FILE=%P3_HOME%\msc_licensing\licenses\license.dat
```

Environment variables are listed in [Table 4-1](#). Note that some variables are specific to UNIX or to Windows. Application variables are replaced on Windows by the `p3_trans.ini` file. See [Analysis Preferences Setup, 14](#) for more information.

Site and User Setup Files

On Windows, the `site_setup.pm` and `user_setup.pm` files can be used to set environment variables and paths specifically for Patran. Site setup sets variables and paths at the Patran installation level. These changes affect all Patran users working with this installation. User setup sets variables and paths at the user account level. The files are read in this order:

1. `site_setup.pm`
2. `user_setup.pm`

Any variables or paths that are set in `user_setup.pm` will take priority over variables or paths set in `site_setup.pm`.

The `site_setup.pm` file can be used to set paths and environment variables for Patran at the installation level. An example of the syntax for the `site_setup.pm` is shown below:

```
setEnv('MSC_LICENSE_FILE','1700@bari,1700@banff');
```

The `user_setup.pm` file resides in your home directory and can be used to set environment variables for individual users. The settings in the `user_setup.pm` file override settings in the `site_setup.pm` file. The `user_setup.pm` file uses the same syntax as the `site_setup.pm` file.

Normally environment settings take higher priority than `site_setup.pm` and/or `user_setup.pm`. An overwrite flag can be used to overwrite an environment variable set at the system level. When used in `site_setup.pm` or `user_setup.pm`, the overwrite flag forces Patran to use the environment variable value that you have set even if it was previously defined by the system.

```
setEnv('MSC_LICENSE_FILE','1700@bari,1700@banff','overwrite');
```

If the overwrite flag is used in `user_setup.pm` and in `site_setup.pm` for the same variable or path, the setting in `user_setup.pm` will take priority.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
MSCP_[app]_HOST <hostname> or MSCP_[app]_HOST[Version] <hostname>	UNIX	<p>See Analysis Preferences Setup, 14 for Windows equivalent.</p> <p>Sets the name of the host on which to execute the given application, [app]. The NASTRAN and MARC variables additionally allow the specification of a different host for each version.</p> <p>For example, to set MSC Nastran Version 20xx to run on a machine called “alpha”:</p> <pre>setenv MSCP_NASTRAN_HOST20xx alpha</pre> <p>For a complete listing of application variables see the default site_setup file.</p>
MSCP_[app]_CMD[vers] <command>	UNIX	<p>See Analysis Preferences Setup, 14 for Windows equivalent.</p> <p>Sets the command path for the application [app]. Some applications may allow Patran to call multiple versions.</p> <p>For example, if MSC Nastran 20xx is located in /msc/bin/nast20xx on the host defined by MSCP_NASTRAN_HOST:</p> <pre>setenv MSCP_NASTRAN_CMD20xx /msc/bin/nast20xx</pre> <p>For a complete listing of application variables see the default site_setup file.</p>
MSCP_[app]_SCRATCHDIR <dir>	UNIX	<p>See Analysis Preferences Setup, 14 for Windows equivalent.</p> <p>Sets the scratch directory for application, [app]. Default is /tmp. For example, to use /msc/tmp as scratch for MSC Nastran:</p> <pre>setenv MSCP_NASTRAN_SCRATCHDIR /msc/tmp</pre> <p>For a complete listing of application variables see the default site_setup file.</p>
NASTRAN_VERSION <ver>	UNIX	<p>See Analysis Preferences Setup, 14 for Windows equivalent.</p> <p>Sets the default MSC Nastran version on the Preference translation parameters form.</p>

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
MSCP_LOCAL_NASTRAN_CMD [vers] <command>	UNIX Windows	Sets the path for the MSC.Flightloads spline verify, aero model import, and loads extraction executable. See Flightloads and Dynamics Setup, 43 for additional information.
MSCP_FLDS_MSG_FILE <file>	UNIX Windows	Sets the path and file name for the MSC.Flightloads message file. See Flightloads and Dynamics Setup, 43 for additional information.
P3_ALLOW_USER_UGII_SETTINGS <yes/no>	UNIX Windows	Allows Patran to use alternate installations of Unigraphics. Setting to “yes” forces Patran to use current Unigraphics environment variables instead of built in Patran Unigraphics Access library variables. setenv P3_ALLOW_USER_UGII_SETTINGS yes
UGII_TMP_DIR <dir> UGII_UGSOLIDS_TMP <dir>	UNIX Windows	Set the scratch directories for Unigraphics CAD Access and the Unigraphics CAD Access UGSOLID module. setenv UGII_UGSOLIDS_TMP /tmp
MSC_PRE_NX5_LICENSE	UNIX Windows	If you intend to use UG NX 4.0 or earlier with Patran, you need to set the environment variable: setenv('MSC_PRE_NX5_LICENSE','yes');
MSCP_PROE_CMD	UNIX Windows	The location of your Pro/ENGINEER installation: setenv(' MSCP_PROE_CMD=/bin/proe')
MSCP_PROE_PREWF4	UNIX Windows	If you intend to use WildFire 3 or earlier with Patran you need to set the environment variable: setenv(' MSCP_PROE_PREWF4','yes or no')
CAT_UNLOAD <dir>	UNIX Windows	Sets the directory where CATIA is unloaded for use by Patran CATDirect Access. Default is /usr/catia/unload.
CATIA <dir>	UNIX Windows	Sets the directory where CATIA configuration files are located for use by Patran CATDirect Access. Default is /usr/catia/cfg.
CAT_CUST ~<username>	UNIX Windows	Sets the CATIA administrator’s account for use by Patran CATDirect Access. Default is ~catadm.
CATMSTR <declaration_file>	UNIX Windows	Sets the CATIA user declaration file to be used by Patran CATDirect Access. Default is \$HOME/USRENV.dcls.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
MSCP_CATIA_LANG <language>	UNIX Windows	Sets the CATIA language to be used by Patran CATDirect Access. Default is en_US (en_US.iso88591 on HP-UX systems).
CATIA_TMP_DIR <dir>	UNIX Windows	Set the default scratch directory for CATDirect Access.
CATIAV5DIR	UNIX Windows	Sets the Directory where CATIA v5 run-time libraries are located.
CATIAPlat	UNIX Windows	For use by Patran CATDirect v5 Access.
CATInstallPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATDLLPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATICPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATCommandPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATDictionaryPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATReffilesPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATFontPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATGraphicPath	UNIX Windows	For use by Patran CATDirect v5 Access.
CATMsgCatalogPath	UNIX Windows	For use by Patran CATDirect v5 Access.
IDEASROOT	UNIX Windows	Sets the root installation location for I-deas CAD system and used by Patran I-deas Access.
IDEAS_VERSION	UNIX Windows	Sets the version of I-deas installed.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
ORBIX IT_CONFIG_PATH IT_PRODUCT_DIR IT_DOMAIN_NAME IT_CONFIG_DOMAINS_DIR IT_LICENSE_FILE	UNIX	Sets run_time library locations of I-deas used by Patran I-deas Access. \$IDEASROOT/orbix \$IDEASROOT/orbix/cfg \$IDEASROOT/orbix openideas11 /etc/opt/iona/domains * \$IT_PRODUCT_DIR/etc/licenses.txt Note: * : This value for IT_CONFIG_DOMAINS_DIR is given presuming that iona directory is installed under /etc/opt.
Requirements for I-deas import: HP: IBM: Ideas-11 must be installed. The Orbix daemons must be installed and running. SUN: Ideas-12 must be installed. The Orbix daemons must be installed and running. WINNT: Ideas-12 must be installed. The IONA services must be installed and running. Note: Ensure that IONA directory is installed under IDEASROOT for Windows.		
P3_PORT <port_num> P3_MASTER <hostname> P3_PLATFORM <platform> P3_ORG <org_name>	UNIX	Sets QueMgr definitions. For more information see Organization Environment Variables (p. 103) in the <i>Patran Analysis Manager User's Guide</i> . Applicable to UNIX installations only.
P3CONVERT2001R1_TEMPLATE P3UPGRADE2001R1_TEMPLATE <dbname> P3CONVERT2003_TEMPLATE P3CONVERT2003R2_TEMPLATE P3CONVERT2004R2_TEMPLATE P3CONVERT2005_TEMPLATE P3CONVERT2005R2_TEMPLATE P3CONVERT2006_TEMPLATE P3CONVERT2007_TEMPLATE P3CONVERT2008_TEMPLATE P3CONVERT2010_TEMPLATE	UNIX Windows	Patran v2001 and later reference the template database to convert databases from earlier versions. Since the Patran PAMCRASH, LSDYNA3D, and SAMCEF require custom template databases (see Creating Custom Template Databases, 73), these variables allow the custom database to be referenced. See Patran Custom Database Conversion, 77 for additional information.
P3_HELP_MODE	UNIX Windows	Specifies Patran to use the HTML helpsystem.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
P3_BRW_HELP	UNIX Windows	Specifies the location of the HTML Browser for the context sensitive HTML help, e.g., c:\Program Files\Internet Explorer\iexplore.exe
P3_HELP_DIRECTORY	UNIX Windows	<p>Specifies the location of the HTML help files directory, e.g., \$P3_HOME/helpfiles/html_patran/</p> <p>Or if you want to access the help from the MSC Software website, set your P3_HELP_DIRECTORY environment variable to:</p> <p>http://www.mscsoftware.com/patran/patran_2010/html_patran/</p> <p>http://www.mscsoftware.com/patran/patran_2008r2/html_patran/</p> <p>http://www.mscsoftware.com/patran/patran_2008r1/html_patran/</p> <p>http://www.mscsoftware.com/patran/patran_2007/html_patran/</p> <p>http://www.mscsoftware.com/patran/patran_2005r3/html_patran/</p> <p>http://www.mscsoftware.com/patran/patran_2005r2/html_patran/</p>
PDB_C_CACHE_SIZE <bytes>	UNIX Windows	<p>Specifies the maximum amount of virtual memory the Patran database system (PDB) will access. Set this value prior to executing Patran.</p> <p><code>setenv PDB_C_CACHE_SIZE 786432000</code></p> <p>The minimum allowable value is 10MB (10485760) and the maximum allowable value is 2GB (2097152000). For additional information see Patran Database Caching and Swapping, 75.</p>
P3_SPATIAL_VERSION	UNIX Windows	Specifies the version of the Interop libraries that Patran will use when importing CAD models. Can be set to r18_sSp3_1, r20 or r20sp1 as long as all or any of those spatial version are installed with Patran.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
PDB_C_SWAP_DIR <dir>	UNIX Windows	Specifies the locally mounted directory in which a scratch/swap file is to be allocated, if necessary. The setting of this value only takes effect before swapping starts. The default is NULL, which causes the value stored in the unix TMPDIR environment variable, or the value stored in the Windows TMP environment variable to be used if they are set. For additional information see Patran Database Caching and Swapping, 75 .
PDF_LOCKING_DISABLED <yes/no>	UNIX Windows	Disables file locking on a database. With file locking enabled (the default), only one Patran process may access the database at once. The default is “No”.
MSC_LICENSE_FILE <port@hostname> MSC_LICENSE_FILE <license_file_path>	UNIX Windows	Sets the location of the license.dat file or the port address for the license server for FLEXlm licensing of Patran products. If not set, Patran will look in /msc/msc_licensing/licenses/license.dat. setenv MSC_LICENSE_FILE 1011@alpha1 setenv MSC_LICENSE_FILE /msc/msc_licensing/licensing/license.dat
FLEXLM_DIAGNOSTICS <value>	UNIX Windows	Sets Patran licensing into a diagnostic mode. Setting a value=3 prints out diagnostic information including license file location or license server name and port. On UNIX data is written to stdout. On Windows data is written to a file called flexnnn.log setenv FLEXLM_DIAGNOSTICS 3
HOMEDRIVE <x:> HOMEPAATH <dir>	Windows	Sets the home drive and directory for the current user. Patran will write files (e.g. patran.ses) to this directory if run from the Start menu or icon. If run from a DOS Command Prompt, these files will be written to the current directory. set HOMEDRIVE=d: set HOMEPAATH=\users\me

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
P3_ENABLE_NFS_DB_ACCESS <yes/no>	UNIX	Applicable only when accessing Patran v7.6 or earlier databases. Sets InterBase NFS Access option on or off. If set to yes, the “Enable NFS Access” will be on by default on the File/New and File/Open forms. <code>setenv P3_ENABLE_NFS_DB_ACCESS yes</code>
TMP <dir>	UNIX Windows	Sets the directory used by InterBase for scratch. Applicable only when accessing Patran v7.6 or earlier databases. Default is /tmp: <code>setenv TMP /tmp</code>
TMPDIR <dir>	UNIX Windows	A standard UNIX or Windows variable. Used by Patran to determine the location for PDB scratch files. <code>setenv TMPDIR /tmp</code> For additional information see Patran Database Caching and Swapping, 75 .
ABAQUS_DRA_UPGRADE_ODB	UNIX Windows	If an older version of an ABAQUS ODB results file is accessed than the currently supported version, this variable allows automatic conversion. It must be set to YES. The file can also be converted using ABAQUS.
P3_mainFont <main_font>	UNIX	Sets the main font for menu windows. Can also be set with an application resource file. See UNIX Application Resources and Fonts, 60 for more details. <code>setenv P3_mainFont 9x15bold</code>
P3_textFont <text_font>	UNIX	Sets font used for databox text. See above.
P3_spreadFont <spread_font>	UNIX	Sets font used in spreadsheets. See above.
MSC_SX_HOME	Windows	If this variable is set to the directory path/location of a valid local installation of SimXpert, then SimXpert can be launched from Patran via the File pulldown menu and model data can be imported through the Analysis application using the MSC or MD Nastran preference.
SM_RICH_CLIENT_CONFIG_FILE	UNIX Windows	Location of SmRichClt.properties file rich client properties files that contains the tree configurations and connection properties for SimManager Typically: C:\MSC.Software\Patran\sm_rc\res\smrichclt\config

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
SM_RICH_CLIENT_IC_HOST	UNIX Windows	The node/machine host name or IP address of the SimManager server that Patran is connecting to
SM_RICH_CLIENT_IC_PORT	UNIX Windows	The port number of the SimManager server that Patran is connecting to. Tomcat default is 8080. WebSphere default is 9085
SM_RICH_CLIENT_IC_PROTOCOL	UNIX Windows	The communication protocol that Patran uses to communicate with the SimManager server. Typically http or https
SM_RICH_CLIENT_IC_WEBCONTEXT	UNIX Windows	The name of the SimManager web server context that is defined during the installation of SimManager.
SM_RICH_CLIENT_ROOT	UNIX Windows	<p>Path where the Rich Client files and are located in the Patran installation directory. Typically C:\MSC.Software\Patran\sm_rc\res\smrichclt</p> <p>Note: When you connect to SimManager from a web browser the format is typically: http://<host name/ip>:<port number>/context</p> <p>Eg. http://sdmtest9:9085/SimManager</p>

4.2 UNIX Application Resources and Fonts

Important:

The following information on font and color settings applies only to UNIX installations. Patran on Windows uses settings as per Control Panel\Display\Settings\Advanced.

Patran uses application resources files (listed in [Table 4-2](#)) to define the required set of X resources. These resources include an optimal color scheme, default window locations and appropriate font sizes. The Patran DVD-ROM provides these resource files, and automatically places them under the `$P3_HOME/app-defaults` directory when you execute the `mscsetup` program.

Table 4-2 Patran Application Resource Files

Patran Application or Module	Application Resource File*
Analysis Manager	P3Mgr
Fatigue	P3fatigue
Patran	Patran

*All Patran application resource files are located under the directory, `$P3_HOME/app-defaults` but can be placed in a user’s home directory for customization.

Changing Patran Form Fonts

The following procedure changes the fonts used in Patran forms.

1. Select an available font. Use the `xlsfonts` utility to list the available fonts.
`xlsfonts | more`
2. Modify the Patran application resources file (see [UNIX Application Resources and Fonts, 60](#) above) uncommenting and editing the following line:
`Patran*mainFont: <menus, forms, etc. font>`
`Patran*textFont: <text box font>`
`Patran*spreadFont: <spreadsheet font>`
For example:
`Patran*mainFont: 8x16`
`Patran*textFont: helvr12`
`Patran*spreadFont: 8x16`
Alternatively, fonts can be specified at the command line using the `-fn`, `-tfn`, and `-sfn` options. See [Command Line Arguments, 69](#) for additional information.
3. Restart Patran.

4.3 LINUX Window Manager Settings

The following window manager settings will provide optimal mouse performance within Patran.

Gnome

1. Click with the middle mouse button on the desktop and choose Gnome Apps/Settings/Desktop/Window Manager from the resulting menus.
2. In the left panel of the resulting form, choose Desktop/Window Manager/Run Configuration Tool for Enlightenment.
3. Set the Keyboard Focus to *Sloppy Pointer*.

KDE

1. Open the KDE Control Panel.
2. Turn off *Display content resizing windows*.
3. Set the Focus Policy to *Classic sloppy focus*.

4.4 The *.pcl and *.def Setup Files

Patran's various customization files are applicable to both UNIX and Windows installations unless otherwise noted.

The settings.pcl File

The `settings.pcl` file contains parameters that Patran uses at start-up. All entries are PCL commands and use the format:

```
pref_env_set_<datatype>( "<variable>", "<setting>" )
```

Patran searches for a `settings.pcl` in the following order: current working directory, users home directory (login directory on UNIX, and home directory as defined by the user profile or HOMEDRIVE:HOMEPATH on Windows), and finally in `$P3_HOME`.

If it does not find a `settings.pcl` file, it creates the file in the working directory. Users may wish to copy this file to their home directory.

Note: The `settings.pcl` file in the Patran installation directory is read only. If you want to modify the `settings.pcl` file in the installation directory, you will need to change permissions on the file to make it read/write.

MSC recommends that users modify a file created by Patran since the format is very specific. Important variables and settings are listed in [Table 4-3](#). For example, a proper setting to turn on hardware graphics would be:

```
pref_env_set_string( "graphics_hardware", "YES" )
```

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
graphics_hardware	string: YES/NO	Turns on or off use of hardware graphics. See Graphics Boards and OpenGL Acceleration , 91
graphics_colors	integer: 64<val<256	Number of Xwindow colormap colors Patran will use, if not capable of running in fullcolor mode.
graphics_refresh	string: YES/NO	If set to YES, Patran will automatically refresh the viewport when it changes. This is useful on systems that do not have backing store capability.
ToolbarHeight	real: 0<val<1	Height of the icon toolbar. Set automatically.
ApplSwitchHeight	real: 0<val<1	Height of form switch area. Set automatically.
VisibleHistoryItems	integer: 1<val<80	Size of history window in lines.
pick_rectpoly	integer: 1,2,3	Whether you enclose the entire entity (1), its centroid(2), or a portion of the entity(3).
show_cycle_picking_form	logical: TRUE/FALSE	Causes Patran to display a cycle clicking box when select databoxes are active.
entity_picking_cursor	string: holeangle xhole +hole + x	Defines cursor type for selecting when select databoxes are active. Typically this is set using the Preferences Picking form.
select_menu_always_on_top	logical: TRUE/FALSE	Causes the select menu to always float above all other forms. <i>This must be set to “FALSE” on Windows installations. Otherwise, users will not be able to type into select list boxes.</i>
DefaultMeshSize	real	Sets the default value for “Global Edge Length” on the Finite Element Create forms in Patran.
SmallScreenLayout	logical: TRUE/FALSE	A TRUE setting invokes Patran in a layout suitable for 1024x768 displays. This variable is not automatically created in the <code>settings.pcl</code> file and must be entered by hand. Default is FALSE.

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
NastranResultsOutput	string: XDB Only XDB and Print OP2 Only OP2 and Print Print Only None	This variable is obsolete and has been superseded by the NASTRAN_XXX_DATA_OUTPUT variables. Please see the table below for more information. Defines the default results file format type for the MSC Nastran Preference. This can be changed from within Patran sessions. The default is “XDB and Print”.
NASTRAN_101_DATA_OUTPUT	XDB+PRINT	For more information on setting the Nastran Results Output, please see, Nastran Results Output, 66 . These settings.pcl parameters are formulated like this: pref_env_set_string("NASTRAN_XXX_DATA_OUTPUT", value) where XXX is the solution sequence number and value is some combination of the values "OP2", "XDB", "PRINT", "PUNCH", "MASTER", "DBALL" concatanted by a "+". Examples: pref_env_set_string("NASTRAN_101_DATA_OUTPUT", "XDB+PRINT") pref_env_set_string("NASTRAN_200_DATA_OUTPUT", "OP2+PRINT+PUNCH") pref_env_set_string("NASTRAN_400_DATA_OUTPUT", "MASTER+DBALL_OP2")
NASTRAN_200_DATA_OUTPUT	OP2+PRINT+PUNCH	
NASTRAN_400_DATA_OUTPUT	MASTER+DBALL_OP2	
xor_highlighting_enabled	logical: TRUE/FALSE	Turns on or off pre-selection entity highlighting when the cursor passes over that entity in the viewport. the default is TRUE.
preselection_line_width	integer	Sets the width of pre-selection highlighting graphics. The default is 3.

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
result_quick_avg_method	string: DeriveAverage AverageDerive Difference Sum	Changes the default averaging method for Fringe and Quick plots in Patran Results Post-processing.
result_quick_transform	string: Global AsIs Default	Changes the default transformation coordinate system for Fringe and Quick plots in Patran Results Post-processing. Note that unless this variable is set, Fringe plots use “as is” coordinate transformation and Quick plots use “default” transformation.
RESULTS_TITLE_CHECK_LEVEL	integer	In cases where an existing jobname is active but an XDB file is attached with subcases not associated to the active job, the results cases pick up the jobname instead of the actual subcase name as defined in the Nastran job. A new settings.pcl variable has been implemented to control this.

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
pref_env_set_integer ("RESULTS_TITLE_CHEC K_LEVEL",level)	integer	<p>This is an integer value with the following meanings:</p> <p>0 (or not set at all) = current functionality is maintained</p> <p>1 = If the jobname and the XDB filename differ, then ignore the jobname when creating the result case titles. This would be just like the described workaround of clearing the jobname listbox and attaching to an XDB file. Thus it will not append the jobname to the beginning of the results case title. No messaging – it just does it.</p> <p>2 = If the jobname and the XDB filename differ, then put up a message notifying the user as such and asking if he wishes to continue with the attachment. It is either a Yes or No. If Yes, then the attachment occurs. If no, then the attachment is abandoned.</p> <p>3 = If the jobname and the XDB filename differ, then put up warning message with a simple acknowledgement OK button. The attachment will still occur regardless.</p> <p>In all cases, if the jobname and the XDB filename are the same, then the functionality remains the same.</p>
graphics_batch_dpi	real	<p>Sets the resolution of the graphic images (JPEG, MPEG, TIFF, PNG, BMP files) when Patran is invoked via batch mode using the -b and -graphics command line arguments simultaneously. Batch mode does not know the dpi resolution and defaults to 100 if this environment variable is not set.</p>

Nastran Results Output

There are two variables that set the results output for MD Nastran. Both the variable NastranResultsOutput and NASTRAN_XXX_DATA_OUTPUT work, but it is important to understand which takes precedence when you run Patran.

1. If the Results Output form has been opened and values set and the job saved, then none of the above settings will change what is set in the form for that job. The values used are the values from the database for that job. Database settings override any settings, but only for the selected job.
2. If neither NastranResultsOutput or NASTRAN_XXX_DATA_OUTPUT settings are present in the settings.pcl file, then the default settings for the current solution sequence is used. The default may be and is different for different solution sequences (101-199, 200, 400 have different defaults).
3. If the NastranResultsOutput variable (obsolete) setting is present, and the values are not found in the database, then this will be used. It is not specific to solution sequence.
4. If the NastranResultsOutput is not present in the settings.pcl file, but the second or some combination of the second type, and the values are not found in the database, then this will be used (NASTRAN_XXX_DATA_OUTPUT).

So for example, if you have an existing job and you select it, it will use the database values if they are present. If they are not present and you have no settings.pcl or the above parameters in it, the defaults will be used. If you have a settings.pcl file, the NastranResultsOutput will be used first and the others ignored if both are present. If NastranResultsOutput is not present and the others are, then they will be used if not defined by the database values for the job. If you select a job, but then change the solution sequence of that job, it will try to read the settings.pcl values since the default or defined data output values may be different for a different solution sequence.

The p3epilog.pcl File

Use the p3epilog.pcl file to include custom PCL programs into Patran at start-up.

Patran searches for a settings.pcl in the following order:

1. current working directory
2. users home directory (login directory on UNIX, and home directory as defined by the user profile or HOMEDRIVE:HOMEPATH on Windows)
3. \$P3_HOME

For additional information see [PCL Start-Up File](#) (p. 35) in the *PCL and Customization*.

Definition Files

Patran recognizes several files ending in .def at start-up.

Patran searches for .def files first in the current working directory, next in the users home directory (login directory on UNIX, and home directory as defined by the user profile on Windows), and finally in \$P3_HOME. The exception is p3toolbar.def, which is not searched for in the working directory.

The Patran Reference Manual describes each of these files. Default examples are created in the \$P3_HOME directory during installation.

Table 4-4 Patran Definition Files

File	Description
p3_printers.def	Defines printers available for hardcopy. See Printer Configuration File (p. 242) in the <i>Patran Reference Manual</i> .
p3_user_menu.def	Defines a user menu on the top menu bar for shareware PCL utilities.
p3quickpick.def	UNIX only. Defines icons and commands for the floating quickpick tools. See The Tool Bar (p. 14) in the <i>Patran Reference Manual</i> .
p3toolbar.def	Defines icons and commands for the icon toolbar. See The Tool Bar (p. 14) in the <i>Patran Reference Manual</i> . The format of this file is slightly different between UNIX and Windows.

4.5 Command Line Arguments

Patran recognizes a number of command line arguments. For example, the following UNIX command causes Patran to execute the commands in `test.ses` upon opening, to this session to `example1.ses`, and to store 500 lines of commands in the history window:

```
% patran -sfp test.ses -sfr example1.ses -hl 500
```

Command line options are applicable to both UNIX and Windows unless otherwise noted (see note about Windows below):

Table 4-5 Patran Command Line Arguments

Command Line Arguments	Purpose
-ans <yes/no>	Forces all prompts in Patran to be answered yes or no. Use this with extreme caution.
-auth <license_loc>	Specifies a location for Patran to obtain a license. Overrides all MSC_LICENSE_FILE settings (including 'OverWrite' on Windows).
-b	Causes Patran to execute in batch mode (without windows). If entered with no other flags, Patran will run a test of licensing and write permissions, then exit. In batch mode, Patran does not accept input from the mouse or keyboard. If given with the -sfp flag, Patran will execute the given session file with no graphics.
-bg <xcolor> -fg <xcolor>	Sets the background and foreground colors for menu windows (not the viewport). These are typically set in the application resource file.
-db	Causes Patran to open a user specified database on startup.
-display <device>	Redirects display to given device. Equivalent to environment variable command: <code>setenv DISPLAY device:0.0</code>
-EchoEnv	Causes Patran to list environment variables that it has recognized, including those set in the .site_setup file.
-fn 	Sets the font used for menu windows.
-tfn 	Sets the font used for text data boxes.
-sfn 	Sets the font used in spreadsheets.
-hb <idle/off>	Controls the Patran heartbeat in the upper right corner of the screen. If set to idle, the heart beats constantly regardless of activity. If set to off it will never beat.
-l	Enables Large Listbox mode for properties and materials.

Table 4-5 Patran Command Line Arguments

Command Line Arguments	Purpose
-hl <#_lines>	Sets the number of visible lines stored in the history window. UNIX default is 200. Maximum is 10000. Windows default is 50 lines with no maximum tested for.
-iam <product>	Sets the mode that the software starts up as. Patran mode does not require this to be defined. Examples: patran -iam MSC.FEA patran -iam MSC.AFEA patran -iam md patran -iam MSC.TFEA
-ifile <init.pcl file>	Sets the PCL initialization file used at Patran startup. Defaults is \$P3_HOME/init.pcl. It is used in conjunction with the “-iam” flag. Example: patran -iam MSC.FEA -ifile init_fea.pcl
-sfp <ses_file>	Causes Patran to execute the user supplied session file named <ses_file> upon start-up.
-sfr <ses_file>	Causes Patran to open and record the executed Patran commands to the session file named <ses_file> instead of the default <code>patran.ses.xx</code> .
-showfonts	<i>UNIX only.</i> Causes Patran to show which fonts are being used.
-stdout	<i>Windows only.</i> Opens a DOS text window which displays Patran diagnostic messages. On UNIX Patran automatically writes these messages to its parent UNIX shell.
-stdout <log_file>	<i>Windows only.</i> Writes Patran diagnostic messages to the file specified by <log_file>.
-graphics	Use in conjunction with the -b(atch) and -sfp arguments. It allows Patran to be run in batch mode and still produce graphical images via a session file when requesting JPEG, MPEG, TIFF, PNG, BMP files. The resolution of the graphic images is controlled by a settings.pcl command: <code>pref_env_set_real("graphics_batch_dpi", real_value)</code> . Batch mode does not know anything about the dpi resolution and defaults to 100 if this environment variable is not set.
-skin <skin>	<i>Windows only.</i> By default launches Patran with a different GUI (Graphical User Interface) skin. Options are office2007 (default), xptunes, xproyale, xpluna, ie5, and vista. The skin option can also be turned off, or the skin changed by modifying the target field of the icon used to start Patran.

Note: On Windows, in order to use any of these command line arguments, you can edit the properties of the Start menu or icon shortcut by right mouse clicking on the shortcut and selecting properties. Then from the Target entry you can add these command lines. Invoking Patran from the command prompt is actually a batch file. This file can be edited to include any of these command line arguments also.

4.6 UNIX Shell Resource Limits

Shell resource limits are applicable to UNIX installations only. The cshell under many operating systems has built in resource limits which the `limit` command controls:

```
% limit
cputime      unlimited
filesize     1048575 kbytes
datasize     131072 kbytes
stacksize    32768 kbytes
coredumpsize 1024 kbytes
memoryuse    32768 kbytes
```

If users encounter crashes or memory related errors, have them change the limits for `cputime`, `filesize`, `datasize`, `stacksize`, and `memoryuse` to their maximums immediately before running Patran (in the same shell) with the following command:

```
% limit datasize unlimited
% limit stacksize unlimited
```

Note that the value shown by the `limit` command may be “unlimited” or may show the maximum system allowable.

Place these commands in the users `.cshrc` file to make the change effective in all shells.

If you are running Korn shell, replace the `limit` command with a similar command called `ulimit`, since the Korn shell does not have limits by default.

4.7 The PDB Database System

The Patran Database (PDB) includes aspects of both relational and object oriented databases. Its features include:

- Improved performance and stability for Patran products.
- Enhanced compatibility between platforms (see [Moving Databases Between Platforms, 75](#)).
- Automatic compression when you close a database.
- Greater control over memory management. See [Environment Variables, 50](#).
- No additional installation requirements.
- Improved compatibility with NFS mounted databases and working directories

Upgrading Databases

Patran automatically upgrades old databases to the current version when you open them. If you have a large number of databases, we recommend that you upgrade these in one “batch” process. Note that once a database is converted, it cannot be reopened in an older version.

The following command converts files from their current database schema version to the latest version (at least one filename must be supplied):

```
$P3_HOME/bin/p3convert <file1.db> <file2.db>
```

Note: Multiple database converts do not work on Windows based systems.

Creating Custom Template Databases

Patran provides a file called **template.db** under the install directory `$P3_HOME`. By default, this file is copied to the user’s directory when you create a new database. This `template.db` file becomes your new, empty database.

The `template.db` file contains information for the many Application Preferences. If your site uses a small number of the Application Preferences and Modules, you may wish to create custom database to reduce the size of empty databases. MSC provides a **base.db** file to create a customized template file. We also provide an MSC Nastran only database called `mscnastran_template.db`. See [Modifying the Database Using PCL](#) (Ch. 7) in the for more information.

Create Custom File from base.db

Follow this procedure to create a custom db.

1. Execute Patran, and create a new database called `custom_template.db`.
2. Load desired Analysis Preference data sets by entering one or more of the following commands in the Patran *Command Line*:

load_abaqus()	ABAQUS
load_ansys5()	ANSYS (Revision 5.0 or later)
load_lsdyna3d()	LS-DYNA3D
load_mscdytran()	MSC.Dytran
load_mscmarc()	Marc
load_mscsinda()	MSC Sinda
load_mscastran()	MSC Nastran
load_pamcrash()	Patran PAMCRASH
load_patran2nf()	PATRAN 2 Neutral File
load_ptermal()	Patran Thermal
load_samcef()	Patran SAMCEF
load_generics()	Loads generic definitions for those developing a Patran custom interface.

3. Exit Patran by selecting Quit from the File menu.
4. Make the custom database available to users by moving the `custom_template.db` file to either the `$P3_HOME` directory or to another directory. Users must select this new template when they create a new database.

Moving Databases Between Platforms¹

Patran databases are directly transportable between supported UNIX platforms. No conversion is necessary. The same is true between Windows and Linux machines. However, moving UNIX to Windows or Linux or vice versa requires conversion.

Table 4-6 System Binary Formats

Platform	Binary Format
HP-UX (PA-RISC), IBM AIX, SUN SOLARIS	32 bit Big Endian
Intel or clones running Windows or Linux	32 bit Little Endian

Patran will perform this conversion automatically. The utility can also be executed outside of Patran using:

```
$P3_HOME/bin/dbport <filename>
```

64 bit Patran Production Release on Windows 64

To open an existing Patran database that was not created in Patran running on Windows in 64 bit Patran, follow these steps:

1. Open the pre-existing database in Patran 2010 on the same platform the database was created on.
2. Save the database.
3. Start the 64 bit version of Patran
4. Open the database

To open an existing Patran database that was created in Patran running on Windows, simply open the database in the 64 bit version of Patran.

Patran Database Caching and Swapping

The PDB database stores frequently accessed data in a memory cache. The size of this cache is controlled by the `PDB_C_CACHE_SIZE` environment variable.

While memory space required by the database system is less than the cache size, Patran will write to system memory and swap space normally. If the cache size is exceeded, Patran will write to a scratch file in the directory defined by the `PDB_C_SWAP_DIR` environment variable.

The scratch file allows you to manage files that would normally exceed available memory/swap space, but is significantly slower. For this reason, the default `PDB_C_CACHE_SIZE` value is 750MB allowing Patran to use all available system memory and swap (unless more than 750MB is available). You may

¹Patran and the dbport utility cannot act on files that are in both the wrong binary format and the wrong version. For example, if you have an old database on a SUN workstation and FTP it to a Windows 2000 workstation, the new version will not be able to open the file. You must run p3convert on the SUN before moving the file. See [Upgrading Databases](#), 73 for additional information.

wish to increase the cache size if your database size exceeds the 750MB default. To modify environment variables see [Environment Variables, 50](#).

Note that these values only affect memory required by database operations. A large meshing operation, for example, will still require system memory and swap. If your system runs out of memory or swap space Patran (or other programs) may shutdown. See [Memory and General Requirements, 83](#) for more information on memory and swap space.

Patran Custom Database Conversion

For databases not based on the full default `template.db`, for example a database based on only the Nastran preference or a custom preference that is NOT in the default `template.db`, then the following environment variable should be used to point to a special version of `template.db`. This database version should be built to hold the appropriate data for converting the original database up from the previous version.

`P3CONVERT200n_TEMPLATE`¹

Alternatively, if a database upgrade is not desired then this variable should be an empty string. Error/warning messages related to this can be ignored. For additional information on the environment variables applicable to Patran, and how to set them using the `site_setup` file, see [Environment Variables](#), 50.

¹The variable name changes with each new version of Patran - the name of the variable reflects the Patran version. A custom database is any database not based on the full default `template.db` (including a subset of the preferences). If converting a custom database older than the previous database version and the intermediate custom template databases are not available, it is recommended that all the convert environment variables except the last one be set to an empty string. The last variable either an empty string or a custom template database so the template data is properly upgraded.

5

Required Hardware & Software Configurations

- Supported OS/Hardware Platforms 80
- The mscinfo Utility 81
- Memory and General Requirements 83
- Hewlett-Packard HP-UX (PA-RISC) Requirements 84
- IBM AIX Requirements 86
- Sun Solaris Requirements 88
- Microsoft Windows Requirements 89
- Linux Requirements 93
- 3D Graphics Drivers 97

5.1 Supported OS/Hardware Platforms

Vendor	OS Levels
Hewlett-Packard HP-UX (PA-RISC) Requirements, 84	HP-UX 11i (11.11)
IBM AIX Requirements, 86	AIX 5.3
Sun Solaris Requirements, 88	Solaris 10
Microsoft Windows Requirements, 89	Windows XP Windows XP SP2 Windows XP SP3 Windows XP-x64 Windows Vista Windows Server 2003, 2003-X64
Linux Requirements, 93	LINUX Red Hat Enterprise 4.0 AS, ES, WS, Red Hat Enterprise 5 update 3 and update 4

5.2 The mscinfo Utility

Patran provides a utility for obtaining important system information. This utility produces summary information on most of the system requirements used in this chapter and is a useful diagnostic tool when contacting MSC Customer Support. The `mscinfo` utility is part of the Patran Core Files installation. You will only have access to it after you have installed Patran

Microsoft Windows Platforms

On Windows, the `mscinfo` utility provides system summary and display information about the computer Patran is installed on, in the Notepad format. This text file can be saved to your hard drive for later use. The `mscinfo` utility can be run by accessing it from:

- **Start>(All)Programs>MSC.Software>Patran>MSC.Info**

The `mscinfo1` utility can also be run on any version of Windows from a DOS command prompt by typing:

```
$P3_HOME\bin\mscinfo
```

where `$P3_HOME2` is the installation directory.

This list shows the different types of information that `mscinfo` returns.

System Summary	OS level, Processor, Total Physical Memory, Available Physical Memory, Total Virtual Memory, Available Virtual Memory, Page File Space, and the Page File name.
Display	Adapter Name, Type, Description, and RAM. Installed Drivers, Driver Version, resolution and color depth.
Drives	Drive letter, description, Compression, File System (NTFS, FAT), Size, Free Space, and Volume Name.
Environment Variables	Lists the environment variables set on the system.
Services	Lists the services running on the system.
Windows Error Reporting	List the errors reported by the system.

¹The `mscinfo` option flags for UNIX are not available on the Windows platforms.

²Throughout this document you will see Patran's installation directory referenced as `$P3_HOME`.

UNIX Platforms

The mscinfo utility for UNIX has slightly different requirements and options available. This information applies only to the separate UNIX script. To run the utility, enter:

```
% $P3_HOME/bin/mscinfo
```

mscinfo will return information as shown below¹:

```
Manufacturer:      GenuineIntel
Node:              fontana
Model:             Intel(R) Pentium(R) 4 CPU 1500MHz i686
OS Level:          SuSE Linux 9.1 (i586) 2.6.4-52-default
X Server:          XFree86 4.3.99.902
Window Manager:    KDE (kdm )
Motif:             2.2.3
3D Graphics Libraries: XFree86-Mesa-4.3.99.902-40 (OpenGL 1.2)
Graphics:          ATI Graphics Adapter
Installed RAM:      1012 MB
Free Tmp Space:     10301080 kbytes
Swap Space:         2055 MB
```

The following table describes the options that can be used to access various subsets of information provided by the mscinfo utility.

Table 5-1 mscinfo Utility Option Flags

mscinfo Option	Use
mscinfo -x	Displays information pertaining to the current Xserver. Must be executed on the graphics head of the system (i.e. not from a remote login or Xterminal).
mscinfo -v	Verbose mode - provides additional information on graphics libraries such as name, patch, or revision date.
mscinfo -c	Displays a list of the commands used to determine system information.

¹You must have root privilege to obtain complete graphics and virtual memory information on Hewlett Packard HP-UX. Running as a general user provides all other data.

5.3 Memory and General Requirements

Patran memory requirements vary according to model size and actions performed. The following guidelines are based on typical use. Solvers or other software that run concurrently with Patran may increase RAM, swap (also referred to as virtual memory), and disk space requirements.

RAM and Swap Guidelines

Patran typically generates memory, “memalloc”, or “PDB” errors when it is unable to obtain sufficient memory. Memory in this context is the sum of physical RAM and paging (swap) space.

Since RAM memory is much faster than disk-based swap memory, increasing the amount of RAM typically improves performance. A good general rule is to provide 25% to 30% of total memory as RAM. Consult your operating system documentation for additional information.

See [UNIX Shell Resource Limits, 72](#) for additional information on accessing memory.

Memory and Disk Space Requirements

The following tables show disk space, swap, and RAM guidelines for small, medium, and large analysis models. Patran may actually run with fewer resources than shown, but these minimums are recommended. The installation indicates required disk space when installing.

Table 5-2 UNIX Disk Space and Memory Requirements

Memory Type	Minimum	Standard	Large Models
Free Random Access Memory (RAM) per user	128 -256 MB	256 - 512 MB	512 MB - 4 GB
Paging Disk Space (Swap)	384 MB	512 MB	768 MB - 2 GB
Scratch Disk Space (/tmp)	50 MB	Solver Dependent	Solver Dependent
Scratch Disk Space (/var/tmp)	10 MB	10 MB	10 MB

Table 5-3 Windows Disk Space and Memory Requirements

	Minimum	Standard	Large Models
Random Access Memory (RAM)	128 - 256 MB	256 -512 MB	512 MB - 4 GB
Paging Disk Space (Swap)	300 - 512 MB	500 MB - 1 GB	1.5 GB

5.4 Hewlett-Packard HP-UX (PA-RISC) Requirements

Patran supports the following HP-UX hardware and software.

Table 5-4 Hewlett-Packard HP-UX Requirements

Hardware Platforms	HP J280, J282, J2240, J3750, J5000, J5600, J6000, J6700, J7000, B1000, B2000, C160, C180, C200, C240, C360, C3000, C3600, C3700, C3750, C8000,
Operating Systems	HP-UX 11i (11.11)
Compiler Versions	HP-UX11i: FORTRAN 90 11.11.99.01, C 11.11.07, C++, C 03.73 (PHSS_35099)*
Window Managers	CDE 1.16 or later
3D Graphics Software	OpenGL†
Graphics Device	Visualize FX5 Pro, Visualize FX10 Pro, Visualize FX-E, FireGL-UX, X3

*The C and FORTRAN compilers are required for dbaccess programming and the Patran Thermal module. Other modules and products do not require compilers. Note additional patch requirements in [Table 5-5](#).

†Open GL libraries are required. Starbase is no longer supported.

HP-UX Patches

In addition to the basic operating system requirements listed in [Table 5-4](#), Patran requires the following software bundles and patches. Note that some patches may have special requirements of their own. These dependencies are documented by Hewlett-Packard. Patch numbers are also subject to change as new versions supersede existing patches frequently. Consult Hewlett-Packard to for additional information.

Table 5-5 Required Patches and Filesets for HP-UX 11i

Patch/Bundle	Purpose
GOLDAPPS11i	Gold Applications Patches for HP-UX 11i, (June 2002)
GOLDBASE11i	Gold Base Patches for HP-UX 11i, (June 2002)
B6268AA	B.11.11.06 Graphics and Technical Computing Software
HWEnable11i	B.11.11.0206.5 Hardware Enablement Patches for HP-UX 11i, (June 2002)
PHSS_35099	HP aC++ 3.73 Compiler*
PHSS_28871	LD(1) and linker tools cumulative patch

*Required for Patran Thermal only.

HP-UX Kernel Settings

The HP-UX System Administration Manager (SAM) is used to adjust kernel parameters. MSC.Software recommends the following changes to the default kernel settings:

Table 5-6 HP-UX Kernel Parameters

Parameter	Description	Default	Recommended
maxdsiz	Max. Data Segment Size	64Mb	90% of swap
maxtsiz	Max. Text Segment Size	64Mb	64 Mb (no change)
maxssiz	Max. Stack Segment Size	8Mb	67108864 (64 Mb)

Patran requires a large block(> 64Mb) of virtual memory. The default maxdsiz is too low. Both the swap size and the maxdsiz parameter must be increased to make additional virtual memory available to Patran.

HP-UX Performance Tuning

There are several kernel parameter settings that may increase Patran performance on the HP-UX systems. MSC.Software provides the following suggestions.

Table 5-7 Performance Tuning

Parameter	Setting	Default
fs_async	1	0
default_disk_ir	1	1 on HP700 class; 0 on HP800 Class
maxusers	100	32

Setting **fs_async** and **default_disk_ir** to 1 enables asynchronous disk writes and disk write caching. This enables faster I/O for Patran, since the application will not wait to verify that the write was completed.

There is a small risk associated with these settings. With **fs_async** and **default_disk_ir** set to 1, disk writes may not be complete should the system crash. This will not corrupt the Patran database. The reward (better database performance) outweighs the risk (lost data). These default parameters are set to support large network cluster applications, like online transaction processing, where data integrity is the primary concern at all times.

Maxusers

sets the maximum number of users. When you reduce the maximum number of users, HP-UX is able to free additional resources for individual processes such as Patran.

5.5 IBM AIX Requirements

Patran supports the following IBM AIX hardware and software.

Table 5-8 IBM AIX Requirements

Hardware Platforms	43P, 44P, IntelliStation Power 265, 275
Operating System	AIX 5.3
Motif Version	2.1
Compiler Versions*	XL FORTRAN 9.1.0.7, IBM XL C/C++ 8.0.0.11†
Window Manager	Common Desktop Environment (CDE 1.0 or later)
3D Graphics Library Version	OpenGL 1.1 (4.3.3.75) or higher
Graphics Accelerators	GXT4500P, GXT6500P.

*Patran requires libxlf90.a runtime libraries.

†Compilers required for Patran Thermal and dbaccess only. [Table 5-9](#) lists additional required patches.

AIX Patches and Libraries

The following table lists required patches and subsets for IBM AIX. Note that patch numbers are subject to change. Contact IBM for the latest version of these patches.

Table 5-9 Required Patches

Patch	APAR	Description/LPP
U463955	IX88249	RPC quoted and escaped character fix
N/A	N/A	xlc.rte version 8.0.0.5
N/A	N/A	xlfрте 9.1.0.7 XL Fortran Environment
N/A	N/A	XL C/C++ version 8.0.0.11
N/A	IY60550	Option menu size miscalculation for AIX 5.3

Starting the X.11 Window Manager Properly

The Patran 3D graphics driver is sensitive to the way you start the X.11 server process. Use one of the following commands to start the X.11 window manager for Patran:

```
% xinit                                X.11 window
% xinit -- -bs                          X.11 window with backingstore
```

Display Environment Variable for IBM Graphics Accelerators

The Patran 3D driver is sensitive to how you define the DISPLAY environment variable. To get the maximum graphics performance when running Patran locally on the workstation, define the DISPLAY variable as follows.

csh:

```
% setenv DISPLAY :0.0
```

ksh:

```
% DISPLAY=:0.0
% export DISPLAY
```

5.6 Sun Solaris Requirements

Patran supports the following Sun Solaris hardware and software.

Table 5-10 Sun Solaris Requirements

Hardware Platforms	Ultra 30, 45, 60, 80, SunBlade 1000, 1500, 2000, 2500
Operating System	Solaris 10 (1/06 or higher)
Motif Version	2.1
Compiler Versions	Sun Studio 12 Fortran, C, C++ compilers * (Patran Thermal and dbaccess programing only)
Window Manager	Motif Window Manager (mwm) 1.2.3, OpenLook 3.x, or CDE
3D Graphics Library Version	OpenGL 1.5 or higher
Graphics Boards	Creator 3D, Elite 3D, Expert3D, XVR-500, XVR-600, XVR-1000, XVR-1200, XVR-2500

*Compilers are required for Patran Thermal and dbaccess programming only. Several compiler patches listed in [Table 5-11](#) are also required.

Support for VirgualGL 2.01 and TurboVNC 0.3.3

Important:	For the Sun Ultra 45 running Solaris 10 with the XVR 2500 graphics board, patch 120928-08 is needed to fix shaded/labels graphics problems.
-------------------	---

SOLARIS Patches and Libraries

The following table lists required patches for SUN SOLARIS. Note that patch numbers are subject to change. Contact your SUN support representative or consult `sunsolve.sun.com` for the latest version of these patches

Table 5-11 Required Patches

Patch	OS Level	Description
106144	Solaris	Elite 3D AFB Graphics Patch*
117461-04	Solaris 10	Linker
120753-02	Solaris 10	OpenMP support libmtsk
119963-04	Solaris 10	SunOS 5.10: Shared library patch for C++

*Required for Elite 3D graphics device only.

5.7 Microsoft Windows Requirements

Patran supports the following Microsoft Windows XP hardware and software.
For additional information on Patran on Windows support and limitations see [Installing on Microsoft Windows, 5](#).

Table 5-12 Windows Requirements

Hardware Platforms	Intel Pentium II, Pentium III, Pentium 4, Xeon, EM64T, AMD Opteron
Operating System	Microsoft Windows XP, XP SP2, SP3, XP-X64, Microsoft Windows Server 2003*, 2003-X64, Vista, Vista-64
Compiler Versions	Microsoft Visual Studio 2005 SP1, 32-bit C++ compiler Version 14.00.50727.762 for 80x86 Intel Fortran for 32-bit applications Version 9.1, Build 20070109Z, Package ID W_FC_C_9.1.034†
Other	3 Button Mouse NTFS file System (for Unigraphics Part file access) Ethernet Card and Microsoft TCP/IP Service (see example below)
Graphics Devices	1280x1024 or higher resolution (see Graphics Boards and OpenGL Acceleration, 91)

*Supermodel is not supported on the Windows Server 2003 platform.

†The listed compilers are required for Patran dbaccess programming and Patran Thermal only. See [Windows C++ and FORTRAN Compiler Requirements, 89](#) below for details.

Windows C++ and FORTRAN Compiler Requirements

Patran Thermal requires the following compilers. These are the only compilers supported for Patran Thermal. The minimum configurations described in [Patran Thermal Setup, 17](#) require approximately 300MB of disk space (including IE 6).

- Microsoft Visual Studio 2005 SP1
- INTEL Fortran, Version 9.1, build 034 or later

Important:

Patran Thermal requires specific compiler modules and compiler installation steps. Follow the instructions in [Patran Thermal Setup](#) when installing these compilers.

64 bit Patran Thermal Requirements

Patran Thermal for 64 bit Windows requires the following compilers.

- **C/C++: Microsoft Visual Studio 2005 SP1** (X64 Compilers and Tools feature must be selected during install)
- Intel Fortran Compiler for EM64T-based applications version 9.1 Build 20070109 Package ID: W_FC_C_9.1.034

Tested Systems

MSC has tested Patran on the following computer systems:

- Compaq Professional Workstation w4000, w6000, w8000, Compaq N800c, N800w Laptop
- Dell Workstation 410, 610, 220, 420, 470, 620, 330, 340, 350, 360, 370, 380, 390, 450, 470, 530, 650, 670, 690, M50, M60, M70, M90, M4300 Laptops
- HP Visualize NT (p- and x-class), xw3100, xw4000, xw4100, xw4200, xw4300, xw4400, xw4550, xw4600, xw5000, xw6000, xw6200, xw6600, xw8000, xw8200, xw8400, xw8600, xw9300, xw9400, mw8240, nw8440, Z400, Z800, nw9440, 8510w, and 8710w Laptops
- IBM IntelliStation Z-Pro, M-Pro, E-Pro, A-Pro
- Sun Opteron W2100z, Ultra 20, 40.

Patran and MSC Nastran on Windows should run on any Intel-based PC that is compatible with Microsoft Windows. For the systems noted above, the amount of RAM ranged from 128MB to 2GB depending on the specific PC.

Important:

Patran does not support Microsoft Windows running on Intel Itanium or Itanium 2 workstations.

Graphics Boards and OpenGL₁ Acceleration

Any graphics board that has a driver for Windows 2000 or Windows XP, and 1280x1024 or greater resolution should function with Patran. Patran uses standard native OpenGL acceleration and should benefit from any OpenGL acceleration such a graphics card provides. MSC.Software recommends using a native OpenGL graphics card. MSC.Software has, however, tested the following specific graphics adapters to verify compatibility with Patran on Windows. We cannot guarantee the functionality of other graphics devices.

- 3D Labs Wildcat IV 7110, 7210, Realizm 100, 200, 500₂, 800
- ATI Fire GL E1₃/X1/Z1, FireGL V7600, V7700, 8700, 8800, Mobility Radeon FireGL T2-64, T2-128, X2-256, X3-256, V3100₄, V3350, V3600, V5000, V5100, V5200, V5600, V7100, V7200, V7300, V7350, Mobility V5600, 5700, 5725, FirePro V3700, V5700, V7750
- Hewlett-Packard FX5+, FX10+
- NVidia Quadro2 EX, Quadro4 700XGL/750XGL/900XGL/980XGL, Quadro4 500/700 GoGL (M50/M60 Laptop), 360m, 570m, 1500m, 1600m, 2500m, FX285, FX 370, FX330, FX350, FX360, FX500, FX540, FX550, FX560, FX570, FX600, FX1000₅, FX1100, FX1300, FX1400, FX1700, FX3000, FX3400, FX3450, FX3500, FX4000₆, FX4400, FX4500, FX4600, FX5500, FX5600, FX4800, FX5800, FX3700, FX3700m, FX2700m, FX770m, FX380, FX580, FX1800, FX3800

TCP/IP Requirements

You must have the Microsoft TCP/IP networking facility installed on Windows.

Patran also requires an ethernet card, even if the workstation is not connected to a network. FLEXIm uses the ethernet card to create a system ID.

¹OpenGL (Hardware) mode requires more colors, and typically causes color flashing on 256 color displays. Use 32K color or higher mode to avoid color flashing. For additional information see [3D Graphics Drivers, 97](#)

²When using the 3D Labs Realizm 500 graphics card, driver 4.5.794.0 is required.

³With the FireGL E1 on Windows 2000, only use driver version 3054 and change the ATI graphics driver profile to Patran.

⁴When using the ATI V3100 PCI Express graphics card with Patran, "Force Copy Swap" has to be turned on.

⁵When using the NVidia Quadro FX1000, the 7.1.8.4 driver needs to be used.

⁶When using the NVidia I SV RC graphics drivers on Windows 2000 and Windows XP use NVidia graphics drivers 56.* or older, or 67.20, or 71 and newer.

NFS Mounted Database on Windows

Patran on Windows has been tested using a windows-based NFS package. A database is mounted from a SUN workstation to a windows workstation. No testing is done using windows workstations as NFS servers to UNIX-based workstations.

5.8 Linux Requirements

Patran supports the following Linux hardware and software. For additional information on Patran on Linux support and limitations see [Installing on UNIX and LINUX, 27](#).

Table 5-13 Linux Requirements

Hardware Platforms	Intel Pentium II, Pentium III, Pentium 4, Xeon, AMD Opteron
Operating System	Red Hat Enterprise 4 (AS, ES, WS) update 3 and update 4 (x86 and x86_64), Red Hat Enterprise 5 update 3 and update 4 (x86 and x86_64)
Motif Version	Open Motif 2.2.3-9*
Compiler Version	Intel C for 32-bit applications Version 9.1, Build 20061103Z, Package ID l_cc_c_9.1.045 Intel C Compiler for EM64T-based applications version 9.1, Build 20061101, Package ID: l_cc_c_9.1.045 Intel Fortran for 32-bit applications Version 9.1, Build 20061103Z, Package ID l_fc_c_9.1.040† Intel Fortran Compiler for EM64T-based applications version 9.1, Build 200611.01 Package ID: l_fc_c_9.1.040
Window Manager	KDE 3.3, Gnome 2.8, 2.16
3D Graphics Library Version	Must install vendor supplied OpenGL video driver.
Other	Ethernet Card
Graphics Devices	1280x1024 or higher Graphics Card (see below)

*Patran for Linux requires Motif 2.2 to run. Open motif rpm files are currently not available from either Red Hat or SuSe. They can be downloaded free of charge from <http://www.openmotif.org/download>. MSC has certified that open motif version 2.2.3-2 works correctly.

†The listed compilers are required for dbaccess programming and Patran Thermal only. See [Linux C, C++ and FORTRAN Compiler Requirements, 93](#) below for details.

Linux C, C++ and FORTRAN Compiler Requirements

Patran Thermal and Patran dbaccess require the following compilers.

- C/C++: Intel C++ compiler 9.1.045
- FORTRAN: Intel FORTRAN compiler 9.1.040

64 bit Patran Thermal Requirements

Patran Thermal for 64 bit Linux requires the following compilers.

- C/C++: Intel C Compiler for EM64T-based applications version 9.1, Build 20061101, Package ID: l_cc_c_9.1.045

- FORTRAN: Intel Fortran Compiler for EM64T-based applications version 9.1, Build 200611.01
Package ID: l_fc_c_9.1.040

Tested Systems

MSC has tested Patran for Linux on the following computer systems:

- Dell Workstation 220, 420, 620, 330, 340, 350, 360, 450, 530, 650
- HP Visualize NT (pL- and xL-class), x-class, xw 4200, xw 4700, xw6200, xw8200, xw9300
- IBM IntelliStation
- Sun W1100z, W2100z

Patran and MSC Nastran on Linux should run on any Intel-based PC that is compatible with one of the supported versions of Linux. For the system tests noted above, the amount of RAM ranged from 128 MB to 1 GB.

Graphics Boards¹ and OpenGL Acceleration

MSC has tested the following Standard and OpenGL graphics adapters to verify compatibility with Patran on Linux.

- FireGL 8700/8800, FireGL X1
- Nvidia FX500, FX1100, FX1300, FX3000, FX3400, FX3450, FX4000
- Wildcat 7210

Note that OpenGL (Hardware) mode requires more colors, and typically causes color flashing on 256 color displays. Use 32K color or higher mode to avoid color flashing. For additional information see [3D Graphics Drivers, 97](#).

Graphics Cards for Linux

MSC Software certifies all graphics cards on Red Hat.

For Red Hat Linux, we obtain all our drivers from the graphics card vendors.

Nvidia cards: <http://www.nvidia.com/contents/drivers/drivers.asp>

FireGL cards: <http://www.ati.com/support/products/workstation>

HP FX cards: http://welcome.hp.com/country/us/eng/software_drivers.htm

Linux drivers consist of two parts: X11 driver with the OpenGL libraries, and secondly, the kernel module driver. X11 drivers match the X11 (X- Server) version installed, i.e. 6.8.2.

¹Before making Fringe plots on Red Hat Enterprise 4.0 (AS, ES, WS), you must set the stacksize for the graphics cards. Create two files in `/etc/profile.d`

```
stacksize.csh "limit stacksize unlimited"
stacksize.sh  "ulimit -s unlimited"
```

Then logout, log back in. To verify type "limit" and stacksize should be unlimited.

The kernel module driver is unique for each kernel. An example of a Red Hat kernel is 2.4.2-2. There are kernels for dual-processor machines, whose kernels end with the extension "smp", and single-processor kernels. `$P3_HOME/bin/mscinfo` will print the OS Level and kernel, and the X11 version name.

HP also requires it's own X Server to be installed along with OpenGL and the display driver.

Below are the steps to install and configure a graphics card in Linux¹.

1. We need to go to level 3, where we have everything loaded but the X-Server.

```
% init 3
```

2. Install the packages provided

```
% rpm -ivh package.rpm
```

The latest drivers will need runtime C library glibc2.2 (or libc62) to install properly.

3. Once all the appropriate packages are installed (`rpm -ivh package.rpm`), we need to make sure the respective kernel module is loaded.

```
% lsmod
```

Examples of kernel modules are:

```
"fglrx"    -- this is the FireGL driver
"NVdriver" -- this is the Nvidia driver
"hpgfx"    -- this is the HP FX driver
```

To manually load the module (only do this in level 3), type:

```
% insmod <modulename>
% lsmod
```

If the module is still not loaded, then something is wrong with the package installation.

```
% depmod -a
```

can be used to find out any unresolved module dependencies.

4. If the modules are loaded, then the next thing to do is to configure the X server parameters for the graphics device.

```
/etc/X11/xorg.conf
```

is the file that controls this, along with the resolution, keyboard, mouse, monitor info, etc.

FireGL driver has a command to use to configure this:

```
% fglrxconfig
```

It will create a config file based on all the inputs given.

For other vendors, the most common config commands are "xf86config" and "Xconfigurator". The "Xconfigurator" command is graphical, and can only be used when the X-Server is already running.

5. If you are still in level 3, to go back to the default level, just type:

```
% exit
```

¹The graphics card driver should be installed in level 3. Level 5 is the default level that the machine boots in.

This will go the default level 5.

If the X-Server doesn't start, something was misconfigured in the `/etc/X11/xorg.conf`

Older versions of Patran installed the Mesa OpenGL driver. Newer versions do not use the Mesa OpenGL driver. If installed, Mesa GL needs to be disabled. To disable it, un-install it.

Patran fonts

All versions of Linux using X.org 6.8.1 lack support for Patran standard fonts. To get the Patran standard fonts, you will need to upgrade to 6.8.2 or higher.

5.9 3D Graphics Drivers

Patran automatically detects the presence of a hardware graphics device. If a supported hardware device is present, Patran hardware rendering can be enabled from an Patran session by selecting Graphics | Preference. The default can be changed using settings.pcl:

```
pref_env_set_string("graphics_hardware", "YES")
```

“YES” indicates Hardware 3D₁ mode and “NO” indicates Software 3D mode.

MSC.Software recommends that you run the 3D driver in Hardware 3D mode if the workstation has a supported graphics option.

Note that graphics acceleration is not applicable to remote displays except for homogenous OpenGL machines. Patran automatically switches to Software 3D mode if running from a remote Xserver that does not support OpenGL.

The Patran 3D driver requires that the DISPLAY environment variable be set to “<hostname>:0.0”, “:0.0”, “unix:0.0”, or “localhost:0.0”. Any other form uses the software 3D mode.

OpenGL Hardware Graphics

Patran supports the OpenGL graphics library. MSC recommends using the Patran OpenGL graphics driver for those hardware devices that support it. To engage the OpenGL drivers, set the following line in settings.pcl to “YES”:

```
pref_env_set_string( "graphics_hardware", "YES")
```

2D Graphics Accelerators

Some systems offer optional 2D graphics accelerators to improve X11 performance. Since Patran is a graphically intensive product, we recommend that you use a 3D graphics accelerator for optimum performance. Patran is only tested with the graphics boards shown in the system specific tables.

Potential Color Flashing Problem

If Patran is running with other X applications, the colors may flash if the mouse is moved outside of an Patran window.

Though harmless, the flashing occurs if Patran tries to allocate colors in the system’s default color map, when another X application has already allocated the color map. Patran instead creates its own custom color map.

As long as the mouse is in an Patran window, Patran uses a custom color map and the colors will be correct.

¹Some graphics boards that support Hardware 3D mode require an additional Z-buffered device and/or layered software product provided by the hardware vendor. See the specific hardware platform section in this chapter to find out if your graphics board requires a Z-buffered device or a layered software product.

On HP systems, the color flashing problem may also occur if you define the environment variable **SB_X_SHARED_CMAP** before you start the X Server. (Patran does not require this variable.)

Additionally, the following parameter in the `settings.pcl` file allows adjustment of the number of colors Patran tries to use. Lowering this value may also solve color flashing problems.

```
pref_env_set_integer( "graphics_colors", 120 )
```

Do not lower the number of colors below 64.

Display Resolution

MSC recommends a minimum display resolution of 1280x1024.

Anti-aliasing on Nvidia Graphics Cards on Linux

Enabling anti-aliasing on certain Nvidia graphics cards can eliminate jagged lines in Patran. Below are the settings for enabling or disabling anti-aliasing on some Nvidia video cards.

For the GeForce, GeForce2, Quadro, and Quadro2 Pro.

__GL_FSAA_MODE	
0	FSAA disabled
1	FSAA disabled
2	FSAA disabled
3	1.5 x 1.5 Supersampling
4	2 x 2 Supersampling
5	FSAA disabled

For the GeForce4 MX, GeForce4 4xx Go, Quadro4 380,550,580 XGL, and Quadro4 NVS.

__GL_FSAA_MODE	
0	FSAA disabled
1	2x Bilinear Multisampling
2	2x Quincunx Multisampling
3	FSAA disabled
4	2 x 2 Supersampling
5	FSAA disabled

For the GeForce3, Quadro DCC, GeForce4 Ti, GeForce4 4200 Go, and Quadro4 700,750,780,900,980 XGL

__GL_FSAA_MODE	
0	FSAA disabled
1	2x Bilinear Multisampling
2	2x Quincunx Multisampling
3	FSAA disabled
4	4x Bilinear Multisampling
5	4x Gaussian Multisampling

For the GeForce FX, Quadro FX

__GL_FSAA_MODE	
0	FSAA disabled
1	2x Bilinear Multisampling
2	2x Quincunx Multisampling
3	FSAA disabled
4	4x Bilinear Multisampling
5	4x Gaussian Multisampling

Higher sampling rates will result in decreased graphics performance in Patran.

6

Problems & Resolutions

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6.1 Startup Failures and Fatal Errors

This section covers problems that cause crashes or that prevent Patran from starting.

Problem 1: “Patran comes up briefly, then disappears with no messages”

Windows

Resolution 1:

1. Go to Start/Run and type REGEDIT
2. Delete the key: HKEY_CURRENT_USER\Software\MSC.Software\Patran
3. Exit registry
4. Start Patran again

Problem 2: “System open error on text I/O”

Any When I attempt to start up Patran, I see the message:

`System open error on text I/O`

Resolution 2: Patran does not have write permission to the working directory.

6.2 Errors in Functions and Opening Databases

This section covers error that affect basic Patran functionality such as use of the mouse, keyboard, or menus. Problems creating, opening, or converting databases are also covered here.

Problem 1: “File is not a valid database”; “PDF Open Error”

Any I attempt to open an old database and get the following message in a dialog box:

```
File is not a valid database
```

In the root window (the window from which Patran was run) I see the messages:

```
PDB ERROR : PDF OPEN ERROR: Can't XDR decode the header block.
PDF ERROR: File '/tmp/blair/template.db' is probably not a pdf
file.
PDB ERROR : CMF_FILE_PROB_NOT_PDF - File is probably not a pdf
file.

p3convert 7.0 initiated at Wed Apr  1 11:05:02 PST 1999

Creating (or updating) marker file for /tmp/blair/template.db

/msc/patran/bin/exe/dbVersion[57]: /usr/interbase/bin/qli: not
found.
/msc/patran/bin/exe/dbVersion[70]: /usr/interbase/bin/qli: not
found.
```

Resolution 1: The PDB errors indicate that the PDB database system does not recognize this file as a PDB database. This typically means that the file is an older Patran database and is in InterBase format. PDB automatically spawns p3convert.

See [Upgrading Databases, 73](#) for information on the p3convert utility.

In this case, p3convert fails with dbVersion errors. This indicates that /usr/interbase does not exist or is not properly installed. InterBase is required to convert Patran databases from versions prior to version 8.

Problem 2: “PDF Open Error: Can’t open file”; “File’s schema version doesn’t match”

Any I attempt to open an old database and get the following message in the root window (the window from which Patran was run):

```
PDB ERROR : PDF OPEN ERROR: Can't open file '<database>'
PDF ERROR: File's schema version: 'PATRAN_2_1_a' doesn't match
requested version
PDB ERROR : CMF_FILE_BAD_SCHEMA_VER - File schema version does
not match
Requested file not a valid database
```

Resolution 2: These errors indicate that the database schema version is not recognized as a Patran database for the current or an earlier version. The most likely cause is an attempt to open a database from a later version of Patran. For example, opening a version 9 database in version 8.5 will produce a message similar to the above.

Problem 3: **No permission for REVOKE access; p3convert_1x12 failed**

Any I attempt to open an old database and get the following message in a dialog box:

```
File is not a valid database
```

In the root window (the window from which Patran was run) I see messages such as:

```
Invoking p3convert_1x12....
....
Updating the ANALYSIS_ELEMENT_SUMMARY records.
Enabling the relation_triggers.
no permission for REVOKE access to TABLE$USER_PRIVILEGES
***Error: p3convert_1x12 failed
```

Resolution 3: Patran is using InterBase to upgrade a pre-version 8.0 database. The problem stems from an earlier version of InterBase which placed the creators name as the owner of the database. If a different user attempts to upgrade the database he/she is denied permission.

This problem should not occur on Windows NT databases.

A script is provided with Patran which will correct this problem. At the UNIX prompt, execute the following command:

```
% $P3_HOME/bin/fixDb <database_name.db>
```

Open the file in Patran and it will convert properly.

Problem 4: Cannot be opened for write access. It may already be in use.

Unix I attempt to open a new or existing database in an NFS mounted directory and get a message in the UNIX window:

```
dbname.db cannot be opened for write access. It may already be
in use
by another process, or may lack the necessary permissions.
Cannot continue.
```


Resolution 4: Patran, like any software using file locking, requires NFS and RPC file locking daemons on the client and NFS server. These names of these daemons will be differ between platforms. For example, on a SUN Solaris NFS server the following daemons are required:

```
/usr/lib/nfs/lockd  
/usr/lib/nfs/mountd  
/usr/lib/nfs/statd
```

Problem 5: **Objects cannot be rotated using two button mouse**

Linux I have a two button mouse. Pressing both buttons at the same time does not seem to emulate the third button and I am unable to rotate items in Patran

Resolution 5: Assuming that you have installed the Linux drivers associated with your mouse, check the XF86config file (part of XFree86). You can turn on/off middle mouse button emulation. Note that XFree will look at XF86config-4 etc. before looking at XF86config.

Problem 6: Updating NODE records; p3convert_1x12 failed

Unix I attempt to open an old database and get the following message in a dialog box:

File is not a valid database

In the root window (the window from which Patran was run) I see messages such as:

```
Invoking p3convert_1x12....  
....  
Updating the NODE records.  
***Error: p3convert_1x12 failed
```

This error will always occur immediately after the NODE update.

Resolution 6: Patran is using InterBase to upgrade a pre-v8.0 database. The problem stems from an earlier version of Patran which incorrectly wrote certain Node information. The p3convert_1x12 utility does not recognize the information.

This problem should not occur on Windows NT databases.

A utility is provided with Patran which will correct this problem:

1. The database must be at schema version 1.11 (equivalent to v6.2) for the utility to work properly. Use the following command to determine the current version:

```
% $P3_HOME/bin/dbVersion -p <database_name.db>  
1.10
```

The value returned is the current schema version. Run the individual p3convert utilities to bring the schema version to 1.11. The p3convert_1x10 updates a 1.09 database to 1.10, p3convert_1x11 a 1.10 database to 1.11, etc. For the above example:

```
% $P3_HOME/bin/p3convert_1x11 <database_name.db>
```

2. Run the chkdb62 utility to fix the database:

```
% $P3_HOME/bin/chkdb62 <database_name.db>
```
3. Open the file in Patran and it will convert properly.

6.3 Import/Export, Analysis Submit and Online Documentation

This section covers errors that occur when Patran interacts with external software. This includes importing or exporting of neutral files, databases, results files, etc. It also includes connection with analysis packages (submitting analysis).

Problem 1: “Fonts in Patran Help on UNIX are too small to read”

UNIX

Resolution 1:

1. In Netscape go to the Edit/Preferences Menu and select the Appearance/Fonts window.
2. Change the “Variable Width Font” and the “Fixed Width Font” sizes to size 14 or larger.
3. Select the “Use my fonts, overriding document - specified fonts” radial button.
4. Click on OK.
5. Exit Netscape
6. Restart Help.

6.4 Cosmetic Problems and Frequent Questions

This section covers warnings and cosmetic problems such as colors or fonts. It also includes several frequently asked questions about Patran and related products.

Problem 1: “Unable to allocate x colors”

Any When I execute Patran, I get the error:

```
Unable to allocate 120 colors. Lower the "graphics_colors"  
setting in settings.pcl (but not less than 64).
```

Resolution 1: This indicates one of the following:

- Your workstation or X terminal does not have enough bit planes of color to support at least 120 colors. Patran requires the workstation, or X terminal, have at least 256 simultaneous colors (8-bit planes).
- There are other X applications that are concurrently being displayed on your workstation or X terminal, that have allocated colors from the terminal's color lookup table, and Patran is unable to allocate 120 colors.

Either reduce the default 120 colors specified in the `settings.pcl` file, or exit one or more of the other X applications that are running. See [The settings.pcl File, 62](#).

Problem 2: **Bad colors; bad font**

Any When I start up Patran, either the colors look funny, the font lettering looks too large, or I must manually cursor place each Patran window that pops up on the screen.

Resolution 2: Make sure that you properly loaded the Patran application resource files from the Patran DVD-ROM. See [UNIX Application Resources and Fonts, 60](#).

Problem 3: Change fonts

Any I would like to override the default font that Patran uses with one that I prefer. Is there a way to do this?

Resolution 3: See [UNIX Application Resources and Fonts, 60](#).

Problem 4: Use 3D graphics accelerator card; hardware graphics

Any The Patran 3D driver seems to run slow even though my workstation has a graphics accelerator board. Is there a way to have Patran to take advantage of the graphics board?

Resolution 4: Yes, through the `settings.pcl` file that is usually located in the user's home or default directory. See [The settings.pcl File, 62](#). For additional information on the Patran 3D graphics driver see [Graphics Boards and OpenGL Acceleration, 91](#)

Problem 5: “4DWM error: invalid icon bitmap”

IRIX During Patran startup, error messages similar to the following are written to the terminal window:

```
4DWM error: invalid icon bitmap
```

Resolution 5: Patran is not running with the correct icon resources. This does not effect the function of Patran. Correct the problem by inserting the following lines into the Patran resource file located in the user home directory, the system `app_resources` directory, or the Patran `app_resources` directory.

```
Patran*iconPixmap:<installation_dir>/icons/default_patran_logo.
icon
PatranGraphics*iconPixmap:<installation_dir>/icons/graphics_vp_
logo.icon
PatranModal*iconPixmap:<installation_dir>/icons/default_patran_
logo.icon
```

6.5 FLEXlm and Licensing Problems

This section covers problems starting or installing the FLEXlm license servers, and problems Patran has communicating or obtaining licenses from those servers.

General FLEXlm Troubleshooting

Most licensing problems manifest themselves with a security error in Patran or one of its modules, preferences, etc. Check the following information to determine the cause of the license problem. First check the paths and server names in the `license.dat` file [Installing the MSC.License Server Using a New UNIX Server, 123](#).

One of the following conditions must be met for Patran to locate licenses:

- A `license.dat` file containing valid nodelock codes and defined by the `MSC_LICENSE_FILE` environment variable (see [Environment Variables, 50](#)) or in the directory `/msc/msc_licensing/flexlm/licenses`.
- If the problem workstation is the FLEXlm license server, it must have a `license.dat` file that includes valid network “FEATURE” codes and correct “SERVER” and “DAEMON” lines. The `license.dat` must be defined by the `MSC_LICENSE_FILE` environment variable (see [Environment Variables, 50](#)) or in the directory `/msc/msc_licensing/flexlm/licenses`. The server must also be running the `lmgrd` and `msc` daemons.
- A `license.dat` that includes a “SERVER” line that references a valid FLEXlm server running the `lmgrd` and `msc` daemons. The `license.dat` must be defined by the `MSC_LICENSE_FILE` environment variable (see [Environment Variables, 50](#)) or in the directory `/msc/msc_licensing/flexlm/licenses`.
- An `MSC_LICENSE_FILE` environment variable that references the hostname and port id of a valid FLEXlm server running the `lmgrd` and `msc` daemons. See [Environment Variables, 50](#) for information on this environment variable.

The lmdiag Utility

FLEXlm also provides a diagnostic utility that may indicate why licenses cannot be checked out.

UNIX:

```
% /msc/msc_licensing/bin/lmdiag -c <license_file_path>
```

Windows:

Use `lmtools.exe`

Where `<license_file_path>` is the full path (including filename) to the `license.dat` file. If the `-c` option is not used, `lmdiag` will operate on a `license.dat` file in the current directory.

FLEXlm Common Problems and Resolutions

Problem 1: “Cannot connect to license server”

Any I think I have done everything correctly, and MSC.Software still cannot connect to my license server. What can I do?

Resolution 1: You appear to have a valid `lmgrd` and `msc` daemon running on a server, but the software cannot locate licenses. First run the FLEXlm diagnostic utilities to see if there are additional error messages:

UNIX:

```
% /msc/msc_licensing/bin/lmdiag -c <license_file>  
% /msc/msc_licensing/bin/lmstat -a -c <license_file>
```

Windows:

Use **Lmtools** in the FlexLm installation

Also check the `lmgrd.log` file on the server to see if any problems occurred in startup.

Next check the following possible causes:

1. The software is not referencing the correct license file or server.

Set the `MSC_LICENSE_FILE` environment variable (in `.cshrc` or `site_setup`) to the correct `license.dat` file (that has the same `SERVER` line as the license file that was used to start `lmgrd`).

UNIX:

```
% setenv MSC_LICENSE_FILE <path>/license.dat
```

Windows:

Set under **Control Panel|System|Advanced|Environment Variables**

or reference the server and port directly (requires no `license.dat` file on client):

```
% setenv MSC_LICENSE_FILE port@host_name
```

On UNIX and Windows, you can see what `MSC_LICENSE_FILE` setting the software is using:

```
% mscfea (or mscafea) -EchoEnv
```

2. The server machine is down.

(continued)

(cont.)

3. The vendor daemon is not running. Both the `lmgrd` and `msc` daemons must be running on the server. Check the `lmgrd.log` file to determine why `lmgrd` did not start `msc` and ensure that the `VENDOR` line includes the correct path, etc.
4. The client does not recognize the hostname on the `SERVER` line or set with `MSC_LICENSE_FILE`. Make sure that the local machine can `ping` or `rsh` to **host**. Also, try the telnet test below.
5. The network is down. Same as above.
6. You are running the license file on the server in an old version of FLEXlm. MSC.Software requires at least FLEXlm v11.6.
7. TCP is not running properly on the client or host. See information on installing TCP/IP under Windows.
8. The port selected in the `license.dat` file and the port given to the software via `MSC_LICENSE_FILE` are not the same, or the port is being used by something else.

You can test TCP access to a host and port with the following telnet command:

```
% telnet <hostname> <portnum>
```

9. Note that this will not allow you to login (`telnet` is not actually listening at that port), but it should connect.

Problem 2: “Invalid lmhostid”

Any My `lmgrd` tells me that the **hostid** is wrong, or not what it expected. What does that mean?

Resolution 2: If the **hostid** is not correct, you should see something like this in the `lmgrd.log` file:

```
9/27 10:08:16 (ariesd) Wrong hostid, exiting (expected
0000578258, got 578258)
```

The codes must be regenerated with the output from **lmhostid** or `mscid` (on the DVD-Rom):

UNIX:

```
% /msc/msc_licensing/bin/lmhostid
lmutil - Copyright (C) 1989-1997 Acresto Software, Inc.
The FLEXlm host ID of this machine is "690ca939"
```

Windows:

Using `lmtools\system settings\ethernet address`

This **hostid** must match the id on the `SERVER` line of the `license.dat` file. Note that the codes must have been generated with the correct **hostid** on the `SERVER` line. If the code does not match, the you will need to obtain new codes from The MSC.Software Corporation.

```
SERVER <hostname> 0000578258 1700
```

Problem 3: “FLEXlm: Invalid License File Syntax (-2,134)”

Any I get the following error message when attempting to start `lmgrd`:

```
FLEXLM ERROR MESSAGE:INVALID LICENSE FILE SYNTAX (-2,134)
```

Resolution 3: Sometimes email alters authorization code files in such a way that may cause problems. The `mscsetup` utility can be used to fix many of these problems. From the installation DVD-ROM, run the following to properly parse, fix if necessary, and install a `licence.dat` file:

```
% mscsetup [-b <inst>] flexlm <path_to_license_file>
```

If, after running this command, you find that you still receive the same error message, you may manually edit the file `license.dat` in the `/msc/msc_licensing/flexlm/licenses` directory and look for possible problems.

1. The following is an example of invalid line breaks:

```
FEATURE PATRAN MSC 1997.0801 15-SEP-1998 0 BC32DE95C6860513D696
\ VENDOR_STRING=OPT:PT=PA_V
DA,PT=PA_CADDS 5,PT=PA_ProENGINEER,PT=PA_CATIA,PT=PA_Eu
clid_3,PT=PA_Unigraphics,PT=PA_IGES
```

In this example the `VENDOR_STRING` line was broken in the words `PA_VDA` and `Euclid`.

The error message from `lmdiag` was:

```
"PATRAN" v1998.0801, vendor: MSC
  uncounted nodelocked license starts: 5-aug-98, expires: 15-
SEP-1998
  This license cannot be checked out because: (FLEXlm error: -
2/134)
->FLEXlm error message: Invalid license file syntax (-2,134)
Hostid required for uncounted feature
```

2. The following is an example of a continuation character being out of place:

```
FEATURE PA PATRAN MSC 1998.0801 15-SEP-1998 0
3CB2FE1595049C009A19
\
HOSTID=DEMO ISSUED=05-AUG-1998 ck=248 SN=0
```

The line continuation sign “\” has moved to the following line. It needs to be placed back on the end of the previous line.

The error message from `lmdiag` was:

```
"PATRAN" v1998.0801, vendor: MSC  uncounted nodelocked
license, locked to "DEMO" starts: 5-aug-98, expires: 15-SEP-
1998
This is the correct node for this node-locked license, but I
don't know if the encryption code is good or not
```

Problem 4: “Compatibility between FLEXlm versions”

Any When attempting to start my `lmgrd` I get an error `can't read data` when attempting to connect. What is the problem? Are all FLEXlm versions compatible?

Resolution 4: You may be using a version of `lmgrd` incompatible with that of the vendor daemon, MSC. The `lmgrd` daemon must be the same or newer than the MSC vendor daemon.

For additional information see the FLEXlm FAQ at www.acresso.com.

Problem 5: “Multiple products use FLEXlm”

Any I have products from several companies at various FLEXlm version levels. Do I have to worry about how these versions work together?

Resolution 5: If you are not combining license files from different vendors, the simplest thing to do is make sure you use the tools (especially `lmgrd`) that are shipped by each vendor.

`lmgrd` will always correctly support older versions of vendor daemons and applications, so it is safe to use the latest version of `lmgrd`. If you have combined license files from two vendors, you **MUST** use the latest version of `lmgrd`.

If you have received two versions of a product from the same vendor, you **MUST** use the latest vendor daemon they send you. An older vendor daemon with a newer client will cause communication errors.

Ignore letters appended to FLEXlm versions, for example, v6.0a. The appended letter indicates a patch, and does not indicate any compatibility differences.

Problem 6: “FLEXlm lmgrd: execl failed”

Any When attempting to start lmgrd, my log had an execl failed: error message. What do I need to do to fix this?

Resolution 6: On startup of the lmgrd or in the lmgrd.log file, you might get an execl failed message while it is trying to start the msc vendor daemon. Something like the following:

```
9/26 15:57:41 (lmgrd) FLEXlm (v5.12) started on myhost
(hp 9000/735) (9/26/95)
9/26 15:57:41 (lmgrd) FLEXlm Copyright 1988-1994, Acresto
Software, Inc.
9/26 15:57:41 (lmgrd) License file:
"./msc_licensing/flexlm/licenses/license.dat"
9/26 15:57:41 (lmgrd) Starting vendor daemons ...
license daemon: execl failed:
(./msc_licensing/flexlm/hpux/msc)-T myhost 5.12 3 -c
./msc_licensing/flexlm/licenses/license.dat
license daemon:system error code:No such file or directory
```

Possible causes:

1. The vendor daemon does not exist at the path specified in the license.dat file (this is the problem above). Note that the license.dat file contains a line that is modified by mscsetup or must be modified by the user:

```
DAEMON MSC /user_defined_path/MSD
```

The actual daemon is lower case. So the modified path should look something like:

```
DAEMON MSC /msc_licensing/flexlm/irix/msc
```

2. The msc daemon does not have execute permissions to everyone. Should be:

```
% ls -l /msc/msc_licensing/flexlm/irix/msc
-rwxr-xr-x 1 root sys 461984 Apr 21 06:25
/msc_licensing/flexlm/irix/msc
```

3. The msc daemon executable is corrupted. You can check by trying to run it directly. It won't run but should give a message:

```
% /msc/msc_licensing/flexlm/irix/msc
14:00:21 (MSC) Vendor daemons must be run by lmgrd
```

Also try executing whatis or file command on the file to make sure it is correct for the platform:

```
% file /msc/msc_licensing/flexlm/irix/msc
/msc_licensing/flexlm/irix/msc: ELF 32-bit MSB dynamic
executable MIPS - version 1
```

Problem 7: “FLEXlm lmgrd: lost lock”

Unix I get error messages at the prompt or in the `lmgrd.log` file:

```
Lost lock
```

Resolution 7: There is a corruption or someone deleted the `lockMSC` lockfile. This file is created in `/usr/tmp` by the MSC daemon (`c:\flexlm` on Windows):

```
% ls -/usr/tmp/lock*
-rw-r--r-- 1 user eng 0Aug 18 08:23 lockMSC
```

If this file is deleted without shutting down the daemons, or if there is a second MSC daemon running, you will encounter lock problems.

Kill all `lmgrd` and `msc` daemons with `lmdown -c <license_file>` or with the `kill` command. Then run `lmgrd` again. It should write a new `lockMSC` file.

Check that the system does not have a cron or shell, etc. utility to delete the contents of `/usr/tmp` periodically.

On the Windows platform, the lock file will typically be found in `%P3_HOME%\msc_licensing\flexlm`.

Problem 8: “FLEXlm lmgrd: “Inconsistent encryption”; “Bad code””

Any In my `lmgrd.log` file, there are the following messages:

```
9/27 9:52:08 (MSC) Inconsistent encryption code for FEATURE
or
9/27 10:08:16 (MSC) Bad code for FEATURE
```

Resolution 8: If you find the following errors when running the `lmgrd`:

There are several possible causes:

1. The `SERVER` or `FEATURE` line in the `license.dat` file was changed or entered incorrectly. A common cause is that the `hostid` on the `SERVER` line was modified.

You may not modify any codes, dates, or ids in the `license.dat` file. A new file must be generated with the correct ids.

2. The codes were not generated correctly perhaps as the result of a miscommunication of or typographical error in the **hostid**.
3. There is a problem with the format of the license file such as an invalid line wrap.

Problem 9: “FLEXlm lmgrd: exit status 2”

HP-UX When attempting to start the `lmgrd` on an HP-UX 9.01 system. Everything looks fine, but my vendor daemon still dies with a status 2.

Resolution 9: The `msc` daemon will only run under HP-UX 10.20. Resolution is to install and run FLEXlm on a supported system.

Problem 10: “Cannot read data from license server (-16,287:9) Bad file”

Solaris The FLEXlm `lmgrd` daemon will not start on my Sun Solaris server. In the `lmgrd.log` file I get the following messages:

```
13:26:35 (lmgrd) Starting vendor daemons ...
13:26:35 (lmgrd) Started MSC (internet tcp_port 1493 pid 3430)
13:26:35 (MSC) Server started on
13:26:35 (MSC) Vendor daemon can't talk to lmgrd
13:26:35 (MSC) Cannot read data from license server (-16,287:9)
Bad file
13:26:35 (lmgrd) Vendor daemon died with status 240
13:26:35 (lmgrd) Since this is an unknown status, lmgrd will
13:26:35 (lmgrd) attempt to re-start the vendor daemon.
```

Resolution 10: FLEXlm fails when the file descriptor limit is set to a value higher than the default of 1024. Execute `lmgrd` from a script that first sets the file descriptor using the `ulimit` command:

```
#!/bin/sh
ulimit -H -n 1024
./msc_licensing/flexlm/solaris/lmgrd -c <license.dat> etc.\
```

Call this script from the `/etc/inittab` file instead of calling the `lmgrd` command directly.

Problem 11: “Windows client cannot get licenses from UNIX server”

WinNT My Windows client cannot obtain FLEXlm licenses from a UNIX server. UNIX clients work fine.

Resolution 11: Check the following possibilities.

- TCP/IP must be installed and functioning on the client. The Windows client should be able to connect via `telnet` (though not necessarily be able to login) to the server.
- The Windows client must recognize the hostname. Reference the TCP address (i.e. `MSC_LICENSE_FILE=1700@192.21.10.1`) instead of the server hostname (i.e. `MSC_LICENSE_FILE=1700@server1`).
- The hostname listed in the `license.dat` file on the server must be recognizable by the client. For example, the Windows client must be able to `ping server1` if the `SERVER` line in the `license.dat` file is `SERVER server1...` It is possible to use the address in the `license.dat` file. Edit `license.dat` on the server to read:

```
SERVER 192.21.10.1 nnnnnnnn 1700
```

Then restart the `lmgrd` daemon with the `lmreread` command (see [Replacing Codes on an Existing UNIX Server, 127](#)).

- Add the server to the DNS search path of the Windows client. Go to the **Control Panel | Network | Protocols** form. Edit the **Properties** of the **TCP/IP** protocol. Add the address of the license server to the DNS search list.

Problem 12: “Restrict licenses to specific users or workstations”

Any I want to restrict license availability to certain users or workstations. Is there a way to do this?

Resolution 12: The FLEXlm options file can restrict availability of licenses (even particular products) to certain users or clients. This can reproduce the function of NCS cells. Please see Acreesso’s web page for their documentation on how to create options files.

www.acresso.com

Problem 13: “Set up redundant servers”

Any I want to spread my licenses over multiple servers to improve reliability. Is this possible?

Resolution 13: Yes. FLEXlm allows licenses to be spread across three simultaneous servers of which at least two must be running to obtain licenses. You must request this from your MSC sales representative. Please see Acreesso’s web page for additional information.

<http://www.acresso.com>

Problem 14: “Obtaining license file from MSC”

Any How do I get licenses now that I have the product?

Resolution 14: Contact your MSC sales representative. You must have the `lmhostid` for your server available. See [Obtain a Patran License File for Your Server, 126](#)

A

Installing the MSC.License Server

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A.1 Overview

The following steps are a simple summary of FLEXlm installation as it pertains to Patran. For more specific information, or information on integration with other products using FLEXlm, consult the FLEXlm documentation. See [Additional Documentation, 132](#).

When Patran executes, it locates the license file, license.dat, which tells it the name of the license server node and the port number over which to communicate with the license manager daemon, lmgrd.

The lmgrd daemon determines what node and port are associated with the vendor daemon, msc, and returns that information to Patran. The application then contacts the vendor daemon which grants licenses if they are available.

Note: License borrowing is currently not supported.

A.2 Installing the MSC.License Server Using a New UNIX Server

Obtain a Patran License File for Your Server

To obtain a license file from MSC, you need to determine the hostid of the machine that will function as your license server. On Unix workstations the `mscsetup` utility obtains this information for you, or you can run the `lmhostid` utility:

```
# /msc/msc_licensing/bin/lmhostid
```

Use the `mscsetup` utility to create an Authorization Request form. Send this form to your MSC.Software Corporation sales representative to obtain your permanent license.

Place the License File on the Server

The `mscsetup` utility automatically installs the `license.dat` file if you provide it during installation.

If you have other FLEXlm products you will need to integrate the new Patran license. See [Additional Documentation, 132](#) for documents that will provide instructions.

The license file may be located anywhere on your license server. MSC recommends locating it in `/msc/flexlm/licenses/license.dat`.

Clients with network-licensed MSC software installations are encouraged to employ the most recent versions of the FLEXlm and MSC licensing daemons (`lmgrd`, `lmutil`, `msc`). These binaries maintain downward compatibility, and regular upgrades are recommended, regardless of whether or not the current software application level requires the upgrade. Updates are available at:

http://www.mscsoftware.com/support/software_updates/licserver.cfm

or from the MSC external ftp site:

ftp://ftp.mscsoftware.com/pub/msc-products/system_util/flexlm

Check Paths and Server Names in the license.dat File

Check that the `license.dat` file for your installation contains the correct server and port settings.

Below is an example of a license file supplied by MSC:

```
-----Begin File-----
# The authorization line length has necessitated display on multiple
# lines. A "\" is used to signify a line continuation. Please enter
# the codes exactly the way they are printed, including the "\"
# continuation character. The VENDOR_STRING field on a feature line must be
# entered on one line only, and must not span more than one line.
SERVER UNKNOWN 72767c4d 1700
DAEMON MSC /user_defined_path/msc
FEATURE PATRAN MSC 1997.0801 15-AUG-1997 5 5C22EC5AE79928E63033 \
```

```
VENDOR_STRING=OPT:PT=PA_VDA,PT=PA_CADDS_5,PT=PA_ProENGINEER,PT=PA_CATIA,PT=PA_Euclid_3,PT=PA_Unigraphics,PT=PA_IGES \
ISSUED=10-JUL-1997 ck=86 SN=12345678

FEATURE PA ADVANCED FEA MSC 1998.1201 24-APR-1998 600 CC0207085167EC550247 \
VENDOR_STRING=BLV:120 ISSUED=24-APR-1997 SN=12345678
FEATURE PA_PATRAN MSC 1998.1201 24-APR-1998 390 ACA207581166B271A261 \
VENDOR_STRING=BLV:78 ISSUED=24-APR-1997 SN=12345678
-----End File-----
```

- The first 5 lines are comments. They can be removed or ignored.
- On the 6th line, SERVER must be in all caps followed by the hostname, then the lmhostid, then the port the daemon will run on.
- The hostname can be determined by typing “hostname” on the machine you wish to be your license server. Replace “UNKNOWN” on the SERVER line with this hostname.
- Verify the lmhostid listed on the SERVER line by running “mscsetup id.” If the lmhostid is not correct, new codes must be generated. Contact your local MSC sales office.
- The default port is defaulted to 1700 but can be any free port. If you don’t know what ports are free, use the default.

The 7th line is the DAEMON line.

- DAEMON must be in all caps, followed by MSC which also must be in all CAPS. This is followed by the path to the msc vendor daemon executable which is in lower case.
- The executable is found in the FLEXlm directory. If your installation directory is /msc/msc_licensing, then the executable is found in /msc/msc_licensing/flexlm/<arch>/msc where <arch> is machine dependent - either hpux, irix, solaris, aix, alpha (for Tru64 systems).

Here is an example of the changes needed to be made for the above file. In this example, the server name is kasane, the installation directory is /msc, and port 1700 is busy (1701 is free).

```
# The authorization line length has necessitated display on multiple
# lines. A “\” is used to signify a line continuation. Please enter
# the codes exactly the way they are printed, including the “\”
# continuation character.The VENDOR_STRING field on a feature line must be
# entered on one line only, and not span more than one line.
SERVER kasane 72767c4d 1701
DAEMON MSC /msc/flexlm/solaris/msc
FEATURE PATRAN MSC 1997.0801 15-AUG-1997 5 5C22EC5AE79928E63033 \
VENDOR_STRING=OPT:PT=PA_VDA,PT=PA_CADDS_5,PT=PA_ProENGINEER,PT=PA_C
ATIA,PT=PA_Euclid_3,PT=PA_Unigraphics,PT=PA_IGES \
ISSUED=10-JUL-1997 ck=86 SN=12345678
FEATURE PA ADVANCED FEA MSC 1998.1201 24-APR-1998 600 CC0207085167EC550247 \
VENDOR_STRING=BLV:120 ISSUED=24-APR-1997 SN=12345678
FEATURE PA_PATRAN MSC 1998.1201 24-APR-1998 390 ACA207581166B271A261 \
VENDOR_STRING=BLV:78 ISSUED=24-APR-1997 SN=12345678
```

Start the Manager Daemons

On the license server, start the license manager daemon with the FLEXlm script. Do not execute this as root since it may create a security risk on your network.

```
% /msc/msc_licensing/bin/flexlm lmgrd
```

If the license.dat file is located in /msc/msc_licensing/flexlm/licenses, this script will start the following daemons:

- lmgrd - the server daemon
- msc - the vendor daemon

Set the lmgrd Daemon to Execute on Reboot

If you are installing using mscsetup on UNIX, the remaining steps should be done automatically.

Modify the /etc/inittab script to start the lmgrd daemon as a user (this is all one line):

```
msc1:23456:once:su username -c '(umask 022; /msc/msc_licensing/bin/lmgrd -c
<license_path> -l <log_file>)'
```

Where \$P3_HOME is the actual installation location and license_path is the location of the license.dat file (i.e. /msc/msc_licensing/flexlm/licenses/license.dat), and log_file is the file to which the daemon will write messages.

Set Up Clients to Access the Floating License

You have two options for setting the file location on clients:

- Make the license.dat file available on each client. The default location is:
/msc/msc_licensing/flexlm/licenses/licenses.dat
- Set the MSC_LICENSE_FILE environment variable to “<port>@<hostname>”. See [Environment Variables, 50](#) for information on setting environment variables for Patran.

A.3 Installing MSC.Licensing Using a New Windows Server

Obtain a Patran License File for Your Server

To obtain a license file from MSC, you need to determine the hostid of the machine that will function as your license server. Execute the `setup.exe` utility from the DVD-ROM and choose MSC.Licensing installation. Your system's `lmhostid` should be displayed on this form. Provide this value to your MSC.Software Corporation sales administrator to obtain your full term codes.

Place the License File on the Server

The FLEXlm installation portion of the `setup.exe` utility automatically installs the `license.dat` file if you provide it during installation.

If you have other FLEXlm products you will need to integrate the new Patran license. See [Additional Documentation, 132](#) for documents that will provide instructions.

The license file may be located anywhere on your license server. MSC recommends locating it in `$P3_HOME\msc_licensing\flexlm\licenses\license.dat`.

When the FLEXlm installation is complete you will be asked to restart your system.

Using Lmtools.exe to Configure FLEXlm

You can use the `lmtools.exe` utility to start/stop, configure, and diagnose your FLEXlm license server. You can access the Lmtools utility from the shortcut in the Start menu at Start>Programs>MSC.Software>MSC.Licensing 11.6>FLEXlm Configuration Utility 11.6.

Set Up Clients to Access the Floating License

The `MSC_LICENSE_FILE` environment variable provides the location of licenses to Patran. It can be set in Control Panel\System\Environment either with the path and file name to the `license.dat` file, or to `<port>@<hostname>`. See [Environment Variables, 50](#) for information on setting environment variables for Patran.

A.4 Replacing Codes on an Existing UNIX Server

Follow these steps if you have an existing Patran installation (Version 7.0 or later) and have received new codes (as a renewal, change, etc.).

Edit the New License File

Place the new codes as a license file in the same directory as the existing `license.dat` file. Name it `license_new.dat`. Change the `SERVER` and `DAEMON` lines in the new license file to include the same port number, server name, and paths as the existing file. For example:

```
SERVER server1 123465 1700
DAEMON MSC /msc_licensing/flexlm/bin/msc
```

Replace License File

Rename the existing `license.dat` file to `license_old.dat`, and rename the new file to the current license file name (i.e. `license.dat`):

```
# mv license.dat license_old.dat
# mv license_new.dat license.dat
```

Force Daemon to Read New License File

Use the `lmreread` command to cause the `lmgrd` daemon to reset using the new license file.

```
# /msc/msc_licensing/bin/lmreread -c <path>/license.dat
```

You should now be able to run Patran products using the new licenses. If for some reason this fails, kill and restart the daemons as follows.

```
# /msc/msc_licensing/bin/lmdown -c <path>/license.dat
# /msc/msc_licensing/bin/lmgrd -c <path>/license.dat
```

A.5 Replacing Codes on an Existing Windows Server

Follow these steps if you have an existing Patran installation (version 7.0 or later) and have received new codes (as a renewal, change, etc.).

Edit The New License File

Place the new codes as a license file in the same directory as the existing license.dat file. Name it `license_new.dat`. Change the SERVER and DAEMON lines in the new license file to include the same port number, server name, and paths as the existing file. For example:

```
SERVER server1 123465 1700  
DAEMON MSC /msc_licensing/flexlm/bin/msc
```

Replace License File

Use Windows Explorer to rename the existing license.dat file to `license_old.dat`, and the new file to the current license file name (i.e. `license.dat`).

Stop and Restart the FLEXlm Service

Using `lmtools.exe`,

1. Click ON CONFIGURATION USING SERVICES Radio Button.
2. Select appropriate license server in box below (if you have more than one).
3. Click ON START/STOP/REREAD Tab.

This should re-read the license.dat file and enable your new licenses. If there is a problem with this, or if the licenses still do not appear to be available, restart the system.

A.6 Installing Using a Nodelock File

There are two types of nodelock files.

- Counted nodelock: Must be installed just like a floating license. The FlexLm server installation is required. A Server and Daemon line is present in the file.
- Uncounted nodelock: No FlexLm server installation is required.

A FLEXlm nodelock license file differs from a network file with the addition of a host id at the end of each FEATURE line. A nodelock file differs from a floating license by restricting users to the local host only.

If you have a temporary or demonstration license it may be supplied as an uncounted nodelock license.dat file. To use this file place it in the Patran home directory (/msc/msc_licensing/flexlm/licenses/license.dat) or set the MSC_LICENSE_FILE environment variable to its location:

- On Unix workstations:

```
% setenv MSC_LICENSE_FILE  
/msc/msc_licensing/flexlm/licenses/license.dat
```
- On Windows 2000 and Windows XP workstations:
Set MSC_LICENSE_FILE under Control
Panel\System\Advanced\Environment Variables.

See [Environment Variables, 50](#) for information on setting environment variables for Patran.

A.7 Uninstalling FLEXlm on UNIX

To uninstall FLEXlm on UNIX, follow this procedure.

Stop the license server

To stop the server run this command:

```
/msc/msc_licensing/bin/lmdown
```

Check the server to make it has stopped running using this command:

```
/msc/msc_licensing/bin/lmstat
```

Remove the server

To manually uninstall the FLEXlm server remove the following files:

- /msc/msc_licensing/flexlm
- /msc/msc_licensing/bin/flexlm
- /msc/msc_licensing/bin/lmborrow
- /msc/msc_licensing/bin/lmcksum
- /msc/msc_licensing/bin/lmdiag
- /msc/msc_licensing/bin/lmdown
- /msc/msc_licensing/bin/lmgrd
- /msc/msc_licensing/bin/lmhostid
- /msc/msc_licensing/bin/lmremove
- /msc/msc_licensing/bin/lmreread
- /msc/msc_licensing/bin/lmstat
- /msc/msc_licensing/bin/lmswitchr
- /msc/msc_licensing/bin/lmutil
- /msc/msc_licensing/bin/lmver

You will also need to remove the entry for the "msc" daemon from /etc/inittab.

The FLEXlm installation is now completely removed.

Reinstalling FLEXlm

If you do not wish to remove the FLEXlm files manually, you can instead reinstall the FLEXlm server. In order to override the previous installation you must install FLEXlm in the same location with the same options as your previous installation.

A.8 MSC_LICENSE_FILE and LM_LICENSE_FILE

By default, all FLEXlm products use the environment variable `LM_LICENSE_FILE` to define the location of the license file (i.e. `license.dat`), or the server and port number (i.e. `1700@servername`). This includes Patran products. For example:

```
# setenv LM_LICENSE_FILE  
/msc/msc_licensing/flexlm/licenses/license.dat
```

This presents a problem, however, when Patran is used in the same environment with other products (CAD packages, solvers, etc.) that also use FLEXlm. If the `LM_LICENSE_FILE` variable is set to the Patran license file location, these other products may not locate their licenses and vice versa.

For this reason, all MSC products use their own variable, `MSC_LICENSE_FILE`, to identify the location of the license file, or the server and port number. The MSC.Software Corporation recommends using `MSC_LICENSE_FILE` for all MSC products. However, for all intents and purposes, these variables are equivalent.

```
# setenv MSC_LICENSE_FILE  
/msc/msc_licensing/flexlm/licenses/license.dat
```

If both environment variables are set, Patran will use the `MSC_LICENSE_FILE` setting.

If you wish more information on `LM_LICENSE_FILE` consult the Acresto supplied documentation (see [Additional Documentation, 132](#)). For additional information on the `MSC_LICENSE_FILE` variable see [Environment Variables, 50](#).

A.9 Additional Documentation

MSC provides a FAQ and End User's Guide in HTML format on the DVD-ROM. To view these documents you need an HTML compatible World Wide Web browser such as Netscape Navigator, or Mosaic.

The documents are stored in `<installation_dir>/flexlm/htmlman/index.htm`. Note that we only provide the End User Guide and FAQ.

To obtain additional information and information on auxiliary products such as FlexAdmin, visit the Acreso Software World Wide Web site, **www.Acreso.com**.

B

Testing the Installation

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B.1 Test Patran

The following test procedure verifies that you have properly installed Patran. \$P3_HOME refers to the installation location.

Patran Test Procedure

Login and Change to a Scratch Directory

Login as a normal user (not root) on each workstation that will be running Patran and change to a scratch directory that has at least 6 Mb of disk space (or run in the default directory on Windows).

Start Patran Using the patran Command

1. Start Patran

Unix method:

```
% patran
```

(Make sure \$P3_HOME/bin is part of your command search path.)

When the Patran *Command Line* form appears, the following messages should appear in the window:

```
$# Session file patran.ses.xx started recording at <date & time>
$# Recorded by: PATRAN Version X.X
$# FLEXlm initialization complete. Acquiring license(s)...
$# PATRAN X.X has obtained 1 concurrent license(s)...
```

The Patran main form should then display.

Windows method:

Choose Start\ (All) Programs\MSC.Software\Patran

The Patran main form should then display.

2. Once the Patran “heartbeat” on the right side is green, select **File** with the left mouse button. While holding the mouse button down, slide the cursor down to **New** and release the button. A form titled *New Database* will appear.
3. Move the cursor in the box under the heading “File Name.” Press the left mouse button and enter the name “**test.**” Press **OK**.

The following messages should appear in the *Command Line* form:

```
$# Copying $P3_HOME/template.db to test.db
$# Copy complete. Opening new database.
$# Database version X.X created by Release X.X successfully opened
...
$# Creating journal file test.db.jou at <date & time>
```

The Patran graphics viewport should appear.

4. Click on the “Geometry” button. Select Create/Solid/XYZ on the Geometry form and click “Apply.” This should create a simple Hyperpatch.

5. Exit Patran by selecting `File/Quit`.

Exit Patran

1. Close the `test.db` database and exit Patran by placing the cursor anywhere in the Patran main form and pressing <Control Q>; or select **Quit** from the **File** menu.
2. Remove the files, `test.db`, `test.db.jou` and `patran.ses.01`.
3. The files `settings.pcl` and `.patran.EventMaps` may also have been created. If so, delete those as well.

B.2 Test Application Preferences

If you have licensed one or more of Patran’s Application Preferences, follow the test procedures in this section.

Setup

Copy and Execute the Example Patran Session File

1. Login as a normal user (not root) on each workstation that has Patran and the Application Preference installed, and change to a scratch directory with at least 7 Mb of disk space:

```
% cd <scratch_dir>
```
2. Copy *one* of the session files listed in [Table B-1](#) into the scratch directory:

Table B-1 Test Session File Names for Patran Application Preferences

ABAQUS Preference	<code>\$P3_HOME/test_files/pat3_abaqus.ses</code>
ANSYS Preference	<code>\$P3_HOME/test_files/pat3_ansys5.ses</code> (5.x or 6.x)
Marc Preference	<code>\$P3_HOME/test_files/pat3_mscmarc.ses</code>
MSC Nastran Preference	<code>\$P3_HOME/test_files/pat3_mscnastran.ses</code>
SAMCEF Preference	<code>\$P3_HOME/test_files/pat3_samcef.ses</code>

Start Up Patran and Execute the Session File

1. Change to a scratch directory and open Patran. Do not create a new database.
2. Select File from the Patran main form and pick Session| Play. The Play Session File form appears.
3. Select the session file listed under “Session File List.” Press Apply.

The session file begins to execute and creates a new Patran database called `test_interface.db`, it then creates a finite element model for the specific Application Preference and creates an input file for the appropriate Finite Element Analysis program.

Verify the Output Files

1. To see if the interface ran successfully, check for the following files in the scratch directory:
 - `patran.ses.01`
 - `test_interface.db`
 - `test_interface.db.jou`
 - `test_interface.inp` (For ABAQUS)
 - `test_interface.prp` (For ANSYS)

- test_interface.dat (For Marc and SAMCEF)
 - test_interface.bdf (For MSC Nastran)
 - test_interface_mesh.dat (For SAMCEF)
 - test_interface.jba (For ANSYS, ABAQUS, Marc, and SAMCEF)
 - test_interface.msg.01
 - SAMANSWERS_1 (For SAMCEF)
 - SAMRUN (For SAMCEF)
 - samjobfile (For SAMCEF)
2. List the **test_interface.msg.01** file to verify there were no errors during the execution. Some test result files may contain warning messages concerning coordinate transformations. Ignore these warning messages.

Verify Analysis Program Submittal From Patran

The session file you ran did not submit the model to an analysis program (for example, ABAQUS, MSC Nastran, etc.). If you have an analysis program available locally or remotely, follow these steps to test the analysis link:

1. Configure analysis environment variables in site-setup. The mscsetup utility should have done this install. See [Environment Variables](#) for more information.
2. Reopen the test_interface.db file in Patran, by selecting Open Database under the File menu.
3. Disable Analysis Manager by entering the following command at the command prompt (the bottom line on the main Patran form):

```
analysis_manager.disable()
```

 If you have the Analysis Manager installed, licensed, and configured, see the next section.
4. Choose Analysis from the Patran main form. The Analysis form appears. Make sure “Action” is set to Analyze, “Object” is set to Entire Model, and “Method” is set to Full Run.
5. Press Select Load Cases (Select Subcase for some preferences). A form titled Select Load Cases appears (Subcase Select for some preferences). If the “Default” load case appears under Selected Load Cases, press OK to close the form. If the “Default” load case only appears under Available Load Cases, cursor pick “Default” and then press OK.
6. Press Apply on the Analysis form. Patran executes the interface again, but it also submits the model to the analysis program.
7. When the job completes, check the output from the analysis code to confirm that the analysis completed successfully. For example, the output file for MSC Nastran will be test_interface.f06.

Test the Analysis Manager

Follow the instructions below if you are licensed to run the Analysis Manager and you have installed it using `mscsetup`. This test procedure assumes you have configured the Analysis Manager to run with MSC Nastran.

Run the Analysis Manager

1. Login as a normal user (not root) on each workstation where you have installed Patran and the Analysis Manager.
2. Change to a scratch directory that has at least 7 Mb of disk space and copy the following file:

```
% cp $P3_HOME/test_files/test_p3am.dat .
```

Start Up the Analysis Manager

1. Start up the Analysis Manager by entering the following:

```
% p3_mgr 1 dat test_p3am 1
```
2. When the the Analysis Manager window appears, press the Apply button (or Submit on Windows). This will automatically submit the `test_p3am.dat` file for analysis. You will hear a beep (on Unix only) when the Analysis Manager has submitted the job. Press the OK button (or Monitor on Windows) on the small form in the center of the monitoring window that appears after a successful submission.
3. An Analysis Manager monitoring window should appear, enabling you to check the status of the analysis job during runtime. When the analysis job completes, you should see a check mark (✓) at the end of the window's graphics bar and you should hear a beep. On Windows, click on the job name under the "*Monitor | Completed Jobs*" tree tab.

If any errors occur, exit Patran and run administration tool tests as described in [Analysis Manager Setup](#) for Unix or [Analysis Manager Setup](#) for Windows for more information. Specify the non-privileged user name that is used in the configuration tests. Usually, the Network Host test and the Network Disk test will uncover any problems.

For further information on testing and administering the Analysis Manager, please read [System Management](#) (Ch. 7) in the .

Test Laminate Modeler

To test the installation of the Laminate Modeler module, you will need to run an example model such as [Example:Laminated Plate](#) (p. 127) in the *MSC Laminate Modeler User's Guide*.

1. Login as a normal user (not root) on each workstation that will be running Laminate Modeler, and change to a scratch directory that has at least 6 Mb of disk space.
2. Change to a scratch directory, open Patran, and create a new database.
3. Follow the instructions for the example problem in the Laminate Modeler manual.

Test Patran Materials

Follow the instructions below if you are licensed to run Patran Materials.

Login and Execute Patran

1. Login as a normal user (not root) on a workstation that will be running Patran Materials and change to a scratch directory that has at least 6 Mb of disk space.
2. Start up Patran as instructed in step 2 under [Test Patran](#), and create a new database.

Enter the Patran Materials Application

1. On the Patran main form located at the top of the screen, press the Materials button. A long vertical form titled Materials should appear at the right side.
2. Enter MATERIALS by pressing the form's Method option menu with the left mouse button (it should list "Manual Input"), and slide the cursor down to the "Materials Selector" option. Then release the mouse button.
3. After a few seconds, a form titled Materials Selector Databases should appear. Under the Databases box, highlight a materials database then press the Apply button.
You should then see a larger form appear titled, Materials.
4. Exit Patran and delete any files that Patran created.

Important: Patran Materials accesses MSC.Mvision Databanks. These databanks are ordered separately, usually as part of the MSC.Mvision product. If you do not see any databanks listed, you need to install them from the separate MSC.Mvision Databanks CD-ROM.

Test Patran Thermal

Follow the instructions below if you are licensed to run Patran Thermal.

Copy and Execute Patran Session File

1. Login as a normal user (not root) on each workstation, and change to a scratch directory with at least 7 Mb of disk space.
2. Copy the Patran Thermal example session file by entering:

```
% cp $P3_HOME/test_files/test_thermal.ses .
```

Start Up Patran and Execute the Session File

1. Open Patran. Do not create a new database.
2. Select File from the Patran main form and pick Session|Play.
3. Select `test_thermal.ses` and press Apply.

The `test_thermal.ses` file creates a new Patran database called `test_thermal.db`. It then creates a finite element model for Patran Thermal and executes Patran Thermal.

Verify the Output Files

1. When the session file completes, wait for the Thermal job to complete.
2. To verify that Patran Thermal completed successfully, check to see that the following files are in the scratch directory:
 - `patran.ses.01`
 - `test_thermal.db`
 - `test_thermal.db.jou`
 - `test_thermal.ses`
 - `test_thermala`

3. Also, enter the following:

```
% cd ./test_thermala  
% qstat
```

4. Check to see that the following output appears with no errors by comparing the output to the following example:

```

executing $P3_HOME/p3thermal_files/lib/qstat . . .
***>>> Status File Number 1<<<***
CPU Time: 0 Hours 0 Minutes 1.61 Seconds
Time = 0.0000000000D+00 SECONDS (Steady State Run)
Iteration # Node # Max Delta Temperature(K) Relax Value
-----
1      22 -1.0229D+02 1.9086225D+02 1.00000D+00
2      18 -3.3054D+01 2.3430853D+02 1.00000D+00
3      13 -1.9924D+01 2.2268794D+02 1.00000D+00
.
.
31      4  1.9311D-04 1.1103411D+02 1.54534D+00
32      5  9.5501D-05 1.1232712D+02 1.54534D+00
CPU Time: 0 Hours 0 Minutes 1.90 Seconds
***>>> Q/TRAN STOP <<<***

```

5. Delete the files in the scratch directory.

B.3 Test Patran CAD Access

If you will be accessing a CAD system for modeling purposes, locate the appropriate test procedure in this section and test the CAD link. This section includes test procedures for the following CAD Access program:

- ACIS Access
- CATIA Access
- CATDirect
- Pro/ENGINEER Access
- Unigraphics Access
- STEP AP

Test ACIS Access

You must have access to a ACIS export file (.sat) to test ACIS Access.

Start Patran and Open a New Database

1. Login as a normal user to a workstation that has Patran installed.
2. Change to the default directory where the ACIS intermediate file resides.
3. Execute Patran by entering:

```
% patran
```
4. Choose File from the Patran main form and then choose New to open a new database file called `test.db`.

Access the .sat File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled "Import" appears.
2. Change "Object" to "Model", "Source" to "ACIS".
3. Select a valid ".sat" file and press "Apply". You should see messages in the Patran Command window indicating that the file is being read. The model should then appear in the Patran viewport.
4. If the import fails, check that you are correctly licensed for the product.

Test CATDirect and CATIA Access

You must have access to either the CATIA v4 model file (CATDirect), or the CATIA v5 CATPart file, or the CATXPRES intermediate file (CATIA Access) to test this product.

Note that Patran CATDirect and CATIA Access are licensed separately.

Start Patran and Open a New Database

1. Login as a normal user (not root) on a workstation that has Patran.
2. Change to the directory where the CATXPRES intermediate file or CATIA model resides.
3. Execute Patran by entering:

```
% patran
```
4. On the Patran main form, choose File. Then choose New and open a new database file called `test.db`.

Access the CATIA Database File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled “Import” appears.
2. Change “Object” to “Model”, “Source” to “CATIA”, and “File Type” to “CATIA v4 Model” or CATIA v5 CATPart” for Direct Access or “CATXPRES File” for CATIA Access.
3. Select either a valid CATIA model file (CATDirect) or a valid CATXPRESS intermediate file (CATIA Access).

You should see messages in the Patran Command window indicating that the model or intermediate file is being read:

```
CATIA Model File Traversal Completed.
```

The model should now appear in the Patran viewport.

4. If the import fails, check that you are correctly licensed for the product.

Test the ProENGINEER Access

Execute Patran and Create a New Database

1. Login as a normal user to a workstation that has ProENGINEER Access and Pro/ENGINEER installed.
2. Change to the default directory where the ProENGINEER intermediate file resides.
3. Execute Patran by entering:

```
% patran
```
4. Choose File from the Patran main form and then choose New to open a new database file called `test.db`.

Access the ProEngineer Part File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled Import appears.
2. Change “Object” to Model and “Source” to Pro/ENGINEER on the form, and select with the cursor the part file under the “Pro/ENGINEER Files” column, or enter the part file name under “Import File.”

You should receive messages in the Patran Command window stating Patran is accessing the Pro/ENGINEER part or assembly file. The Pro/ENGINEER model should appear in Patran viewport.

If Patran did not successfully access ProENGINEER, verify the installation and make sure the workstation is licensed for ProENGINEER Access and Pro/ENGINEER.

Test Unigraphics Access

An EDS/Unigraphics part file that was created by EDS/Unigraphics Versions 14.0, UG NX 3.0 or earlier is required to test Unigraphics Access.

Important: On the Windows platform, Unigraphics Access can only access part files in NTFS partitions. See [Microsoft Windows Requirements](#) for additional information.

Start Patran

1. Login as a normal user and change the directory to where a Unigraphics part file resides.
2. Execute Patran by entering:

```
% patran
```
3. Select New... under the File menu. Place the cursor in the box under File Name and press the left mouse button. Enter a name of the new Patran database file (e.g., `test.db`). Press OK.

Access the EDS/Unigraphics Part File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled Import appears.
2. Set “Object” to Model and “Source” to Unigraphics on the form, and select with the cursor the part file under the “Unigraphics Files” column, or enter the part file name under “Import File.”
A message similar to the following should appear in the Patran Command Window:

```
$# Opening Unigraphics part-file "<default_dir>/xxxx.prt"
```


The geometry stored in the Unigraphics part file should appear in the Patran viewport.
3. Exit Patran by selecting Quit under the File menu.
4. Delete the files created by Patran.

Test STEP Access

You must have access to a STEP export file (.stp) to test STEP Access.

Start Patran and Open a New Database

1. Login as a normal user to a workstation that has Patran installed.
2. Change to the default directory where the STEP intermediate file resides.
3. Execute Patran by entering:

```
% patran
```
4. Choose File from the Patran main form and then choose New to open a new database file called `test.db`.

Access the .stp File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled “Import” appears.
2. Change “Object” to “Model”, “Source” to “STEP”.
3. Select a valid “.stp” file and press “Apply”. You should see messages in the Patran Command window indicating that the file is being read. The model should then appear in the Patran viewport.

If the import fails, check that you are correctly licensed for the product.

C

Software Deinstallation Form

■ Contract Amendment Form 148

C.1

Contract Amendment Form

It is agreed that the Schedule of Charges and Usage Fees is amended as follows:

Client warrants that the software will not be reinstalled on the computer(s) listed above, without first obtaining a proper license for its use from the MSC.Software Corporation. These changes may entitle MSC to modify the charges for the above in accordance with its then prevailing charges for comparable licenses.

All other Terms and Conditions remain unchanged.

Company: MSC.Software Corporation:

Signature: Signature:

Title: Title:

Date: Date:

System Admin. Tel./Fax/E-mail:

MSC Agreement Number

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